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ABSTRACT

An update and extension of EURO Reports and Studies No. 77 ("Graduate Medical Education in the European Region"), this publication provides information in the form of narrative descriptions and tabular data of graduate medical education in 30 European nations. Information is presented on functions of internship, content of training, training needs, and pointers. Part I contains descriptions for each country presented in terms of general arrangements, stages of specialization, content of training, organization and control, assessment, and additional observations. Nations included are: Albania, Austria, Belgium, Bulgaria, Czechoslovakia, Denmark, Finland, France, German Democratic Republic, Federal Republic of Germany, Greece, Hungary, Iceland, Ireland, Israel, Italy, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Spain, Sweden, Switzerland, Turkey, Union of Soviet Socialist Republics, United Kingdom, and Yugoslavia. Part II consists of tables comparing basic information across countries, summarizing training requirements for each country, and summarizing training requirements in individual specialties across countries. Data confirm the trend toward postgraduate training in general practice and family medicine across Europe. (SM)

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The WHO Regional Office for Europe is one of six regional offices throughout the world, each with its own programme geared to the particular health problems of the countries it serves. The European Region has 32 active Member States,[a] and is unique in that a large proportion of them are industrialized countries with highly advanced medical services. The European programme therefore differs from those of other regions in concentrating on the problems associated with industrial society. In its strategy for attaining the goal of "health for all by the year 2000" the Regional Office is arranging its activities in three main areas: promotion of lifestyles conducive to health; reduction of preventable conditions; and provision of care that is adequate, accessible and acceptable to all.

The Region is also characterized by the large number of languages spoken by its peoples, and the resulting difficulties in disseminating information to all who may need it. The Regional Office publishes in four languages — English, French, German and Russian — and applications for rights of translation into other languages are most welcome.

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[a] Albania, Austria, Belgium, Bulgaria, Czechoslovakia, Denmark, Finland, France, German Democratic Republic, Federal Republic of Germany, Greece, Hungary, Iceland, Ireland, Israel, Italy, Luxembourg, Malta, Monaco, Netherlands, Norway, Poland, Portugal, Romania, San Marino, Spain, Sweden, Switzerland, Turkey, USSR, United Kingdom and Yugoslavia.

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PREAMBLE

This publication is an up-date and extension of EURO Reports and Studies No. 77, *Graduate medical education in the European Region*, published by the WHO Regional Office for Europe in 1983. This consisted of tables showing the specialties and subspecialties available as well as the duration of training in the countries of the European Region. During a WHO seminar on medical specialization in relation to health needs held in 1984 [a] it was suggested that additional information be provided in the form of narrative descriptions about graduate medical education. These descriptions now form Part I of the present publication.

The information was obtained from the countries themselves who were provided with a general framework consisting of the following headings:

— general arrangements,
— stages of specialization,
— content of training,
— organization and control,
— assessment,
— additional observations.

The resulting narratives have been edited but no rigid format or length was imposed since the intention was to let contributors comment at their discretion on any matters of particular relevance to their own circumstances such as planned changes in the systems. The individual descriptions therefore vary in style and length although following the same broad sectional headings. This first attempt to obtain descriptions of this kind of information throughout the European Region is not exhaustive. Medical education and specialist training change so frequently that further revision will inevitably be required. The hope is that the readers will find the descriptions enjoyable, interesting and informative.

[a] *Medical specialization in relation to health needs*: report on a WHO meeting. Copenhagen, WHO Regional Office for Europe, 1985.

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Part II consists of tables that closely follow the pattern of the previous edition. A number of footnotes to the tables give additional information.

Altogether 30 Member States have supplied data. The information received indicates that they are trying to relate the production of specialists to health service requirements. It also confirms the trend towards postgraduate training in general practice and family medicine across Europe. These two developments have a special significance at a time when more and more countries are reassessing their current health policies in the light of the regional health for all policy. In that sense, these preliminary findings open the way to more elaborate studies of how much the organization of postgraduate training is conducive to improving the relevance, quality and efficiency of the health care provided.

Part I

Country descriptions

INTRODUCTION

The country descriptions that follow cover a wide variety of issues concerning the specialist training of physicians. Many of these issues invite discussion and, as always, the situation is constantly changing.

Specialist training builds upon basic undergraduate training and general clinical training and leads to continuing education and continuing practice review. The first important point that has to be made, therefore, is that to look at the duration and content of specialist training in isolation may be misleading. In this regard, these narrative descriptions provide a helpful opportunity to place specialist training in the context of medical education as a whole.

Functions of internship

Different philosophies about the purpose and scope of internship have been evident within the Region for a number of years. There is clearly a widespread feeling that some opportunity should be given for general clinical training under careful supervision during, or immediately after the end of, the formal undergraduate medical course. There are a number of reasons for this feeling which receives different emphasis in different places.

First, there is the prime necessity of ensuring that new medical graduates are able to consolidate their basic skills in history taking, physical examination and sympathetic communication with patients and their relatives. For this, clinical experience in the broad general fields of medicine and surgery is incomparably valuable. Nevertheless, modern medical practice requires so many different skills, almost regardless of what specialty is pursued, that a strong case can be made for this general clinical training period to include experience in at least psychiatry, paediatrics, geriatrics and family practice. The major problem is finding time for this range of experience, unless the intern period, or its equivalent, is extended to more than one year.

Second, there are strong arguments for providing young medical graduates with an opportunity to sample a variety of specialties before making a definite career choice. The relative importance given to different fields of medicine by the undergraduate is very different from the relative size of the clinical specialties in a health care system, and perhaps different again from the relative importance attributed to them by the general public. Undergraduates may have very little opportunity to gain an impression of what life is like as a specialist in radiology, anaesthetics, otolaryngology or public health, for example. Many graduates make career choices on the basis of inadequate information and misleading impressions from their undergraduate days. There is a case, therefore, for providing a considerable number of optional modules of experience during the early years after leaving medical school.

Third, there is the view that all specialist practice should be founded on a broad appreciation of the problems and practice of medicine in general. Many people feel strongly that the opposite is true, but little hard evidence supports either view. It may be held that the best surgeon or paediatrician is the dedicated enthusiast who enters his/her specialty as soon as internship or other regulations permit, and never wavers from his/her "true" course. Others will maintain that more well-rounded individuals who come to their specialty after some experience in other kinds of medical work will serve their patients better in the long run. Generalizations are not possible since doctors make their career choices for a variety of reasons, in response to many social and other pressures, and at various stages. Whether or not they will benefit from single-mindedness or breadth of experience again often depends on personality. Some compromise is therefore needed between compulsory breadth of experience, and its absolute denial by a rigid mono-specialist career structure. The compromise may take two forms: allowing the opportunity for breadth of experience through general clinical training, or specifying the kinds of related experience that must be included in specialist training.

Content of training

Following from the above comments, it is clear that in many cases the requirements of specialist training lay down not only the length of time that must be spent in the specialty itself, but also the periods of time that must be spent in related disciplines. This is a most valuable way of looking at the process of specialist training and if arrangements can become sufficiently flexible, it is of great help to doctors who change course from one specialty or subspecialty to another, who wish to spend periods of time abroad or in research, or who have to interrupt their specialist training for domestic commitments or other reasons.

The question that may arise is whether it matters if the different varieties of experience are obtained in a particular sequence, or at a particular level of training. At what stage, for example, should a trainee in venereology obtain experience in microbiology or gynaecology? At what level should a neurosurgeon obtain experience in neurology or general surgery? The solving of problems of this kind may often be a matter of assessing and counselling individual trainees, but it is likely to be an important next stage in the development of these patterns of specialist training if a more modular arrangement is to emerge. In particular, it is important to work out as clearly as possible the relationship between specified types of experience contributing to the makeup of specialist training, and experience gained during general clinical training as discussed above. A major anxiety in many countries is the prolongation of graduate training, and clearly the acceptability of an extended internship, intended to provide general clinical training, will be greatly enhanced if at least some of the experience obtained can be recognized as the equivalent of a module of subsequent specialist training.

Manpower planning at a detailed level within graduate training is heavily influenced by these considerations. In looking at the number of training positions available, it is necessary to take account not only of the posts required in a specialty for trainees in that specialty, but also the number of posts required in the specialty for trainees in other specialties. To this must then be added the number of posts required for trainees in general practice, occupational health, military medicine and other branches of medical practice. The burden of providing periods of training for recruits to other specialties will obviously fall more heavily on some specialties, such as internal medicine, than others.

Training needs

On the broader front of medical manpower planning there are important relationships between the requirements of specialist training and the requirements of patient service. These problems have been evident for many years, and no country escapes them. The comments of several European countries show that they attempt to relate the number of places in training programmes, by specialty, to the need for different types of specialist and hence the anticipated number of career opportunities. In practice, attempts at this form of planning usually involve looking at two separate equations: the number of training places in relation to training capacity (i.e. the number of departments/institutions able to provide good training) and the number of training places in relation to the regional and national need for doctors in the specialty concerned. This means either that these two relationships conveniently coincide, which is most

unlikely, or that the gap between them is a pointer for the future development and rationalization of specialist training.

Similarly, calculations are often made of the number of specialists likely to be accommodated by the system over the next 10 or 20 years, in relation to the number of graduates leaving the medical schools or arriving in the country from abroad. The probable, or sometimes certain, surplus of medical graduates may be all too evident. The prospect of at least some partial relief from the impending crisis is offered by the expectation that general practice will absorb most of those doctors who do not succeed in becoming specialists in a hospital-based discipline. As a short-term expedient and until medical school entry can be more effectively controlled, this may be a realistic expectation. In the longer term, the danger is that it will inhibit the development of good graduate training programmes in general practice and the improvement of general practice as a discipline in its own right.

Levels of specialization

Countries such as Czechoslovakia, Poland and the USSR have more than one level of specialization and each level has clearly defined training requirements. This is quite a separate arrangement from that in other countries where the requirements for subspecialization, in a branch of a main specialty, are superimposed upon some or all of the requirements for training in the main specialty.

There are various relationships between general practice and hospital-based specialties in different countries, and various degrees of specialization within general practice. The primary care team may include doctors who work exclusively in paediatrics, gynaecology, or general medicine at a first-degree level of specialization. Alternatively, the team or group practice may consist of several general practitioners, each of whom has a special interest, so that one doctor will see most of the paediatric problems in addition to his/her general work, another will see most of the psychiatric problems in addition to his/her general work, and so on. Such general practitioners will normally have completed part, or even all, of a specialist training programme in the discipline of their particular interest before entering general practice, and may hold the relevant diploma or certificate. Thus, without formal recognition of a statutory level of first-degree specialization, many countries will have doctors undertaking specialist work at this kind of level.

Subspecialization is a complex issue, for similar reasons. In the broad field of internal medicine, for example, there will be completely dedicated experts in endocrinology, cardiology, nephrology and many other specific subspecialties in large cities and particularly in major academic centres

where a full range of diagnostic facilities and support services is available. This could be regarded as third-degree or tertiary specialization. In smaller communities and more peripheral areas, however, it is more likely that there will be general internists with a special interest in a particular field of medicine who, like the general practitioners described above, spend part of their time dealing with specialized problems in their field of interest and the remainder of their time in general internal medical work. The level at which the subspecialty is practised may be different from that of the academic centre, since rare and complex problems may need to be referred for further investigation or specialized forms of treatment, and it may therefore be argued that their work represents something between second- and third-level specialization. This distinction tends to be reflected in the way that specialist training is completed or complemented in its final stages.

Pointers

The capacity study on graduate medical education in the European Region carried out in 1974[a] (and updated in 1978[b]) made certain comments and recommendations that now bear repetition. For example, a need was noted for further study of the precise definition of individual specialties as named in different countries and different languages, particularly in the areas of psychiatry, epidemiology and public health, general practice, and pathology and its subdivisions. Work on the functional analysis of specialization, i.e. what specialists actually do in their everyday work, is of great importance in this context.

Very little effective work had been done in 1974 on the techniques for evaluating graduate education, and this remains true: "It is . . . essential to explore the relationship between the delivery of health care to the community and the type of education required." Recent years have seen considerable moves, both in Europe and elsewhere, to reorient the undergraduate curriculum and to examine its relevance to health problems in the community. Comparable soul searching is required at the graduate level, to break away from a process in which countries merely imitate each other's specialist training arrangements because they are longer, more detailed and more impressive. In some countries general practice has taken a lead in attempting to evaluate and assure the quality of care, and in establishing a relationship between this and the processes of training for the specialty. Quality assurance is becoming a more general byword throughout the hospital-based specialties and its fundamental relationship to specialist training must not be forgotten.

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[a] Document EURO 6301(1).
[b] Document EURO ICP/HMD 003(1).

More information is clearly now available about the numerical relationship between training posts and health service requirements, in a number of countries. Significant steps have also been taken in some cases to reduce the output of medical schools in order to bring training and service requirements into a better balance in the future. The individual doctor, the individual unit or department, and the individual specialty are more likely to be caught up in the fine details of manpower planning than to be greatly impressed by the broad sweep of general policy. Here a great deal of work remains to be done, not only within the health care system itself but in its relationship to research and to university and academic appointments.

J. P. Parkhouse

ALBANIA

For information on Albania, see Tables 1, 2 and 3 in Part II.

AUSTRIA

General arrangements

Basic medical education takes six years. A minimum of three years of practical training after graduation is required for recognition as a general practitioner. For specialties, a minimum of six years of practical training in appropriate training institutions is required for recognition.

After obtaining specialist recognition, doctors may acquire further subspecialty qualifications in various fields: for example, in cardiology as a subspecialty of internal medicine, or in vascular surgery as a subspecialty of surgery. To qualify in a subspecialty, a minimum of three additional years of training is required in the field concerned, after completion of the main specialization.

Stages of specialization

There is only one level of specialization in each specialty.

Content of training

For general practitioners, postgraduate education takes three years. It includes practical training in:

- internal medicine, 12 months;
- surgery, 3 months;
- accident surgery, 3 months;
- gynaecology and obstetrics, 6 months;
- paediatrics, 5 months;
- otorhinolaryngology, 2 months;
- dermatovenereology, 2 months.

In these various fields, training is designed to provide theoretical knowledge together with practical experience in: emergency care (rapid diagnosis, immediate management, preliminary care); basic care (diagnosis,

therapy and prognosis of common diseases); specialist care (awareness of specialist diagnostic and therapeutic techniques); preventive care; follow-up care; and social medicine and geriatrics (where applicable).

Postgraduate education for specialists takes six years of which three to five, depending on the specialty, must be spent in the specialty itself. The remaining time is used to obtain experience in related disciplines. The scope of practical knowledge and experience that a specialist must acquire during training includes: general knowledge of the specialty, understanding of diagnostic and therapeutic methods and alternatives, techniques of examination, special forms of expertise required for the specialty, preventive health care, rehabilitation and geriatrics (where applicable).

Organization and control

The planning of postgraduate education is a responsibility of the Federal Chancellery (Department of Public Health).

Assessment

Training facilities for postgraduate medical education are subject to recognition by the Federal Chancellery (Department of Public Health).

Evidence of the successful completion of practical training for general practice or a specialty must be produced in the form of a certificate for each of the fields concerned. These certificates must be completed by designated doctors who act as tutors for the purposes of training. The certificate must state specifically that training in a given field has been undergone as stipulated, and must indicate whether or not it was completed satisfactorily.

Additional observations

Continuing education

Continuing education for medical practitioners is optional. Courses are organized by the General Medical Council (*Ärztekammer*), universities and various other institutions.

Other special areas of work

Doctors who intend to work as physicians in occupational or industrial medicine are required to attend a 12-week course at the Austrian Academy of Occupational Medicine. A one-year course with examination at the university is compulsory for doctors intending to take up permanent employment in the public health service (e.g. as a medical officer of health). Doctors wishing to work as military medical officers are required to attend a one-month course and to pass an appropriate examination within the military.

BELGIUM

General arrangements

Basic medical education lasts for six years, and is followed by a one-year internship. The length of time required for specialization is four to six years.

Stages of specialization

There are two levels of specialization in a given specialty: basic and higher training.

Content of training

Training for specialization includes both the theoretical and the practical aspects of the various fields related to the specialty envisaged. As time progresses, candidates take on more and more responsibility in their activities.

All candidates must either present a paper at a scientific meeting or publish an article related to their discipline at least once during training.

Organization and control

The Ministry of Public Health and the Environment has established two bodies to deal with various aspects of specialist training.

The first body is a board for certifying candidates in each of the medical specialties recognized in the system of compulsory health insurance. Each board is made up of a French-speaking chamber and a Flemish-speaking chamber composed of between 12 and 16 physicians recognized as specialists in the given specialty.

The certification boards advise on the training plans submitted by the specialist candidates. They also monitor the implementation of training

programmes, taking into consideration both the training supervisors and the candidates. Finally, they advise the Minister on requests made by candidates to be certified as specialists.

The second body is a higher council of specialists and general practitioners dealing with appeal cases, also composed of French- and Flemish-speaking chambers. The chambers hold joint meetings to advise the Minister in the following areas:

— establishment of criteria for certifying specialists, general practitioners, training supervisors and training departments;
— requests for recognition as trainers or training departments;
— all general matters relating to the functioning of certification boards, training supervisors and questions of principle.

Candidates for specialist training submit a training plan (*plan de stage*) to the Minister within three months of commencing training. This plan describes all the proposed training activities for the total duration of the training, and lists proposed training supervisors and training departments. Any subsequent change must have the prior approval of the Minister. The training plan is then submitted to the competent chamber of the appropriate certification board. Candidates may be requested to appear before the chamber to supply additional information.

Proposals for the accreditation of training supervisors and training departments are submitted to the Minister who decides based on the advice received from the higher council.

Assessment

At the beginning of the training period, candidates receive a logbook in which all the training activities undertaken must be registered. Each year all medical acts performed personally or participated in are recorded. Attendance at seminars, workshops and courses and other training activities are also listed. At the end of each year, the logbook is handed over to the relevant chamber of the certification board and a new one is supplied. In addition, candidates report annually to the board on the progress they have made.

At the end of training, a request for certification as a specialist is sent by the candidate to the Minister. This request is accompanied by attestations from training supervisors and the latest logbook.

Additional observations

Training in geriatrics

Special criteria apply to certification as specialist in internal medicine with particular competence in geriatrics as well as for the accreditation of training supervisors and training departments in geriatrics.

Candidates must already be certified specialists in internal medicine; certification in this specialization is retained after obtaining additional competence in geriatrics. Training in geriatrics takes at least one year in a recognized training department after specialist certification in internal medicine. Candidates must present at least one paper at a scientific meeting or publish one article in the field of geriatrics.

Requests for certification are submitted to the appropriate chamber of the board dealing with internal medicine. In this particular case, however, the Minister designates four additional specialists in internal medicine with significant experience in geriatrics or who are already certified in this area.

BULGARIA

General arrangements

Basic medical education takes six years, including internship. This is followed by either (*a*) direct entry into general practice (primary health care) or (*b*) three to five years' training in a hospital specialty or in public health.

Stages of specialization

There are two principal types of specialty: (*a*) basic (or main) specialties (Table 1); (*b*) additional specialties (subspecialties). These are subspecialties of some of the basic specialties; for example, for the basic specialty of internal medicine there are additional specialties of gastroenterology and cardiorheumatology (Table 2).

Training for a basic specialty lasts three to five years at the end of which there is a state board examination, both practical and theoretical. After passing this examination, a certificate (diploma) is issued which licenses the specialist in the specialty concerned. Only after basic specialization has been completed in this way, can a further training period of 1.5–2 years be undertaken in an additional specialty related to the basic specialty. At the end of this further period of training, the specialist must pass another state board examination in order to obtain an additional diploma licensing him/her in the relevant subspecialty. Diplomas for specialties and subspecialties make it possible to obtain promotion in the hospital career structure, with improved salary.

Some specialties are said to be compatible with others. These are basic specialties in which the training programmes have parts in common, or similar content. When full training has been completed in one such specialty and the state board examination has been passed, training in the second compatible basic specialty can be achieved in a shorter period of time (usually two years) on the basis of a special programme. Completion of training in the second compatible specialty is again marked by a full

state board examination. Examples of compatible specialties are: surgery with neurosurgery, urology and orthopaedics; paediatrics with infectious diseases and clinical laboratory medicine (see Table 3 for a complete list).

Content of training

Training includes theoretical elements (lectures, seminars, round-table discussions, case conferences, etc.) which occupy 30% of the curriculum, and practical experience and training under supervision which occupy 70% of the curriculum. For each specialty, the period of training in the specialty itself and the time spent in related disciplines are shown in Table 4.

Specialist training is carried out in two main ways.

Full residency: three years of training in a Medical Academy hospital. The number of posts available for such specialist training is limited, both overall and in different specialties.

Training based on a regional hospital: Bulgaria is divided into 27 regions, each with a regional hospital of about 1000 beds. For training purposes, these hospitals are designated as first- or second-degree training bases, and specialist training takes either four years based on a first-degree training hospital or five years based on a second-degree training hospital. For most of the training period, the trainee is assigned to a specific department, and has the guidance and supervision of both a regional specialist and a Medical Academy teacher who periodically visits the hospital. For specialist training undertaken in regional hospitals, a six-month course, or individual training at a Medical Academy hospital department, is an obligatory requirement for the completion of training and eligibility to sit the state board examination.

Organization and control

The organization, planning and control of postgraduate training is the responsibility of the Presidium of the Bulgarian Medical Academy. A special Department of Postgraduate Training undertakes the necessary administration and organization under the direct leadership of a vice-president of the Medical Academy responsible for education and training. A council of experts acts as a consultative and advisory body. Major policy issues are discussed at joint meetings of the Board of the Presidium of the Bulgarian Medical Academy and the Ministry of Public Health. Orders based on decisions made at these joint meetings are signed by the Ministry of Public Health.

The actual planning of postgraduate training involves the coordinated activities of different institutions at various levels: the Board of the

Ministry of Health, directorates at the Ministry of Health, research and educational institutes of the Medical Academy, the chief specialists at the Ministry of Health, and the Directorates for Health and Welfare at the Regional People's Councils.

The preparation of an annual plan for postgraduate training takes place in stages. First, based on proposals from the above-mentioned institutions and individuals, a draft plan is prepared for courses as well as for individual training on proposed topics. These draft plans are distributed to all health services throughout the country. Applications for participation in either a course or an individual training scheme are collected at the Department of Postgraduate Training of the Medical Academy. If more than four or five candidates apply for a prospective course included in the draft plan, this course is included in the final plan. If fewer than four or five candidates apply, the topic is included with other individual training topics in the draft plan for which there are applications. Courses are designed according to specially prepared programmes. Individual training is arranged according to a programme prepared for each trainee. Some courses and individual training schemes not included in the annual plan are arranged to meet urgent needs in some regional health services, or to prepare people for the immediate introduction of new technology.

The procedure for undertaking specialist training begins with registration at the Department of Postgraduate Training of the Medical Academy. Registration is based on individual proposals from the regional Directorates of Health and Welfare, and the selection of candidates depends on personal requests for types of specialization and the needs of the relevant health services. The Department of Postgraduate Training issues an individual booklet at the beginning of training, showing the place of specialization, the date of commencement and the person responsible for training. Progress during training, including the parts of the programme completed, the courses and individual training carried out, the results of assessments (colloquia) and comments, is noted in this booklet. The booklet must be presented when the candidate appears for a state board examination.

Bases for training in different specialties are recognized according to the range of hospital activities they provide and the teachers available. Lists of these bases for specialization are made by special order, proposed by the Medical Academy and signed by the Ministry of Public Health, and are revised at regular intervals.

Assessment

Assessment of the trainee's performance includes regular preliminary examinations (colloquia) about every six months. The examination is

carried out by a Medical Academy teacher, the teacher personally responsible for the trainee and a representative of the local health authorities. At the end of training, each trainee receives a general assessment letter as part of his/her entitlement to sit the state board examination. The state board examination is carried out by a commission of three Medical Academy professors in the specialty.

As mentioned above, training arrangements and teachers are assessed periodically, so that the categorization of hospitals in each region is regularly revised. They are either not recognized as a base for training in a given specialty, or recognized as a second-degree base for training (which will take five years) or as a first-degree base for training (which will take four years).

Additional observations

Continuing education

Great attention is paid to continuing education. It is recognized as a basic principle that every specialist should pass a refresher course or an individual training programme at the Medical Academy at least once every four or five years. Courses differ, lasting from one week to one month. Special courses are organized for chiefs of departments including new developments in the specialty, administration, training, teamwork, etc. Other courses deal with the introduction of new methods and techniques for diagnosis and treatment, and new technical equipment.

A further form of continuing education is participation in conferences, symposia, and both national and international congresses. The research and teaching staff of the Medical Academy organize short courses of one to several days concerning important issues in a specific field or of an interdisciplinary nature. Other conferences are organized by local health authorities with the participation of the Medical Academy. At these conferences, individual and team experiences are presented and discussed, and participation may be regional or nationwide. Conferences of this kind are aimed at stimulating interest, increasing personal knowledge, and encouraging involvement in applied scientific investigation and regular analysis of personal or team experiences. Another form of continuing education is the preparation of a thesis and its public defence for the Ph.D. degree. Altogether, the provision of support and motivation for continuing self-education, either with or without outside assessment, is regarded as highly important.

Another important aspect of postgraduate training and continuing education is the system introduced at the Medical Academy whereby every professor or associate professor is required to stay and work for two days every month in a regional hospital. These visits are arranged

according to an annual plan which is distributed to all health services throughout the country. During his/her stay in the regional hospital, the professor gives lectures, runs seminars, round-table discussions and case conferences, conducts ward rounds and consultations with patients, demonstrates methods and techniques, and also helps with organizational problems. The professor gives guidance to doctors preparing Ph.D. theses, assesses specialist trainees and reviews the locally available equipment, facilities and staffing levels. The staff of the various departments in the regional hospital and in neighbouring hospitals of the district attend most of the professor's activities. At the end of the visit, the professor prepares a written report, copies of which are sent to the Ministry of Public Health, the Medical Academy and the regional authorities.

A related activity with an important influence on continuing education and on health services is the so-called republican emergency consultation service developed by the Ministry of Public Health: professors and other senior and highly competent staff from the Medical Academy are available on call — by special air flight, helicopter or car service — to attend difficult and complicated emergencies in provincial hospitals. The consultant may help with diagnosis or carry out a sophisticated form of treatment or operation, discussing the problem and the procedures with local staff.

Training for general practice

Until recently, general practice required no special postgraduate training. A specialty of general medicine (general practice) has now been introduced and the training of specialists will take four years. It will be divided each year into eight months' training at the regional level and four months in a Medical Academy institution, according to a specifically designed training programme. For doctors who have already served for five or more years in the primary health care services, a one-year intensive training programme will be arranged including a four-month course at the Medical Academy. At the completion of training, a state board examination, theoretical and practical, will be taken and, based on the results, a certificate (diploma) will be issued licensing the specialist in general medicine. General medicine will thus be established as a full specialty with equal rights to any other specialty, so that it should prove possible to attract candidates to specialize in this field and to remain in the front line of health services with the satisfaction of equal prestige, authority and financial reward to other specialists.

Discussions continue as to whether there should be additional specialties and compatible specialties that tie in with general medicine and, if so, which disciplines these should be.

Training in public health and allied fields

One of the 24 national, problem-orientated scientific research and educational institutes which are incorporated into the structure of the Bulgarian Medical Academy is the Institute of Social Medicine. This Institute is the fundamental base for training in the field of public health, medical administration, health economics, etc. Most courses and programmes of individual training are organized at this Institute, and all training programmes in the field are developed there. Some training is provided through the departments of social hygiene at the schools of medicine in Plovdiv, Varna and Pleven, under the general guidance and assistance of the Institute of Social Medicine. Postgraduate training in public health, medical administration, etc., is provided both for doctors and for higher personnel in other health professions.

New developments

The whole system of postgraduate training of health personnel in Bulgaria is based on a special codex, which was last revised in 1973. A new version of the codex is now under discussion. In particular, a number of ideas and proposals for developments in the field of postgraduate training are being debated. For example, there are many proposals for introducing new specialties (e.g. allergology, cytology and orthodontics), for introducing new subspecialties (e.g. the recognition of endocrinology as a subspecialty of paediatrics as well as of internal medicine) and for dividing specialties (e.g. toxicology into clinical toxicology and hygiene toxicology). Other proposals concern the duration of training (e.g. raising the length of training in surgery and general hygiene to five years) and the redistribution of time devoted to the specialty itself and to related disciplines. There are proposals to increase the amount of training in surgery required for neurosurgery, urology, etc., and to lengthen the period of general hygiene in the training programmes of other hygiene specialties. It is very common for specialists in clinical disciplines who are engaged in hospital administration to participate in training courses and obtain specialization in social hygiene (public health and hospital administration). There are now proposals for specialists in social medicine who are engaged in health services administration to have training and experience, and eventually obtain specialization, in a clinical discipline.

Table 1. Specialties for health personnel with higher education

Specialty	Training period[a] (years)
Medicine: basic (main) specialties	
Anaesthesiology and reanimation[b]	3
Clinical laboratory	3
Dermatology and venereal diseases	3
Epidemiology	3
Forensic medicine	3
Infectious diseases[b]	4
Internal diseases (internal medicine)	4
Medical parasitology[b]	3
Medical radiology	3
Microbiology	3
Neurology	3
Neurosurgery[b]	4
Obstetrics and gynaecology	4
Ophthalmology	3
Orthopaedics and traumatology[b]	4
Otorhinolaryngology	3
Pathologoanatomy	3
Paediatrics	4
Physiotherapy and rehabilitation	3
Psychiatry	3
Radiation hygiene[b]	3
Roentgenology	3
Social medicine	3
Sports medicine[b]	3
Surgery	4
Transfusion (blood) haematology	3
Urology[b]	4
Virology[b]	3
General hygiene	3
Communal hygiene[b]	3
Occupational hygiene[b]	3
Nutritional hygiene[b]	3
Paediatric (child and juvenile) hygiene[b]	3
Medicine: fundamental disciplines	
Anatomy	3
Biochemistry	3
Biology	3
Histology	3
Medical genetics	3
Pathophysiology	3
Pharmacology	3
Physiology	3

Table 1 (contd)

Specialty	Training period[a] (years)
Pollution prevention	3
Radiobiology	3
Toxicology	3
Stomatology	
General stomatology	3
Orthopaedic stomatology and orthodontics	3
Paediatric stomatology	3
Surgical stomatology	3
Therapeutic stomatology	3
Pharmacy[c]	
Drug analysis	3
Drug technology	3
Organization and economics of pharmaceutical services	3
Specialized training for nonmedical health personnel[d]	
Biochemistry	3
Biomedical engineering	3
Biomedical X-ray technique	3
Clinical chemistry	3
Fundamental medical chemistry	3
Health economics	3
Health sociology	3
Health statistics	3
Hospital building and construction	3
Human biology	3
Medical mycology	3
Medical physics	3
Medical psychology and paedagogics	3
Medical radiological physics	3
Medical zoology	3
Microbiology	3
Physical rehabilitation	3
Sanitary chemistry	3
Sanitary engineering	3
Veterinary control	3
Virology	3

[a] Duration of specialist training in a second-degree regional hospital lasts one year longer than mentioned here.

[b] No second-degree hospitals exist for training in these specialties. They therefore require the fixed training period shown here.

[c] Pharmacists can specialize in and acquire the specialty of clinical laboratory.

[d] Performed at the Medical Academy.

Table 2. Additional specialties (subspecialties)

Required first specialty	Subspecialty	Training period (years)
Internal medicine	Gastroenterology and dietetics	1.5
	Endocrinology and metabolic disorders	1.5
	Cardiorheumatology	1.5
	Nephrology	1.5
	Pneumology and tuberculosis	2
	Clinical haematology	1.5
	Occupational diseases	1.5
Paediatrics	Paediatric rheumatology	1.5
	Clinical haematology	1.5
Surgery	Paediatric surgery	1.5
	Facial surgery	1.5
Stomatological surgery	Facial surgery	1.5
Occupational hygiene	Occupational diseases	2.5

Table 3. Compatible specialties

Basic specialty	Compatible specialty (training period two years)
Obstetrics and gynaecology	Surgery (and vice versa)
	Anaesthesiology and reanimation
	Physiotherapy and rehabilitation
	Urology
Internal medicine	Infectious diseases
	Clinical laboratory
	Pneumology and tuberculosis (and vice versa)
	Medical parasitology
Paediatrics	Infectious diseases
	Clinical laboratory
	Physiotherapy and rehabilitation
	Anaesthesiology and reanimation
	Medical parasitology
Neurology	Psychiatry (and vice versa)
	Neurosurgery (and vice versa)
	Physiotherapy and rehabilitation
	Occupational diseases

Table 3 (contd)

Basic specialty	Compatible specialty (training period two years)
Surgery	Orthopaedics and traumatology (and vice versa) Neurosurgery (and vice versa) Urology (and vice versa) Anaesthesiology and reanimation Physiotherapy and rehabilitation
Microbiology	Epidemiology (and vice versa) Medical parasitology Virology All specialties in hygiene
Epidemiology	All specialties in hygiene Medical parasitology (and vice versa)
Infectious diseases	Epidemiology (and vice versa)
Pathologoanatomy	Forensic medicine (and vice versa)
Roentgenology	Medical radiology (and vice versa)
General stomatology	Orthopaedic stomatology Paediatric stomatology Surgical stomatology Therapeutic stomatology
Therapeutic stomatology	Paediatric stomatology (and vice versa)
All specialties	Social medicine
Sports medicine	Internal medicine Paediatrics[a] (and vice versa) Orthopaedics and traumatology[a] (and vice versa)
Dermatology and venereal diseases	Occupational diseases
Orthopaedics and traumatology	Occupational diseases
Otorhinolaryngology	Occupational diseases
Ophthalmology	Occupational diseases
Any hygiene specialty	Any other hygiene specialty

[a] Training in this compatible specialty takes 2.5 years, but 2 years vice versa.

Table 4. Content of specialist training[a]

Specialty	Training period (months)			Related disciplines	Training period (months)
	total	in the specialty	in related disciplines		
Anaesthesiology and reanimation	36	33	3	Internal medicine Surgery Clinical laboratory	1 1 1
Virology	36	30	6	Microbiology Infectious diseases	5 1
Infectious diseases	48	37	11	Epidemiology Microbiology Clinical laboratory Internal medicine or paediatrics Neurology	1 1 1 6 2
Medical parasitology	36	28	8	Communal hygiene Social medicine Epidemiology Pathologoanatomy Internal medicine Pharmacology	0.5 1 1 0.5 4.5 0.5
Neurosurgery	48	45	3	Neurology	3
Orthopaedics and traumatology	48	39	9	Surgery	9
Pathologoanatomy	36	33	3	Forensic medicine	3
Radiation hygiene	36	32	4	Communal hygiene Occupational hygiene Nutritional hygiene Pollution prevention	1 1 1 1
Sports medicine	36	30	6	Internal medicine Orthopaedics	3 3
Forensic medicine	36	30	6	Pathologoanatomy	3
Urology	48	33	15	Abdominal surgery Thoracic surgery Vascular surgery Nephrology Endocrinology	9 2 3 0.5 0.5

Table 4 (contd)

Specialty	Training period (months)			Related disciplines	Training period (months)
	total	in the specialty	in related disciplines		
Paediatric hygiene	36	31	5	Paediatrics	3
				Infectious diseases	20 days
				Surgery	10 days
				Epidemiology	7 days
				Neurology	7 days
				Psychiatry	7 days
				Ophthalmology	
				Skin diseases	
				Otorhinolaryngology	9 days
Communal hygiene	36	34	2	Epidemiology	20 days
				Radiation hygiene	10 days
				Statistics	30 days
Occupational hygiene	36	33	3	Communal hygiene	20 days
				Nutritional hygiene	10 days
				Social medicine	30 days
				Internal medicine	10 days
				Neurology	10 days
				Pulmonology	10 days
Nutritional hygiene	36	32	4	Communal hygiene	20 days
				Occupational hygiene	20 days
				Paediatric hygiene	10 days
				Social medicine	20 days
				Epidemiology	20 days
				Infectious diseases	15 days
				Internal medicine	15 days

[#] For specialists with specialist training in disciplines outside the specialty itself.

CZECHOSLOVAKIA

General arrangements

Basic medical education takes six years, including a one-year internship. Following this period of basic education, graduates enter directly upon specialist training.

Stages of specialization

There are two stages of specialization.

The first stage of specialization, for which the training period is 2.5 years, is compulsory for all graduates. Table 1 shows the specialties that can be studied and the training required in other related fields. A minimum of 1.5 years must be spent in the specialty itself.

The second stage, or higher specialization, is not compulsory and the opportunities for training depend on the social and health needs of the community. Training for second-stage specialization lasts three to five years, all of which is spent in the specialty itself. Training in other related fields is chosen from a list of options, or according to the tutor's recommendations.

Specialties in which there are two stages of specialization are called basic specialties. There are 20 basic specialties in Czechoslovakia:

- internal medicine;
- paediatrics;
- surgery;
- gynaecology;
- neurology;
- psychiatry;
- dermatovenereology;
- anaesthesiology and resuscitation;
- orthopaedics;
- urology;

— stomatology;
— ophthalmology;
— otolaryngology;
— radiodiagnosis;
— radiotherapy;
— pathology;
— clinical biochemistry;
— hygiene and epidemiology;
— medical microbiology;
— general medicine.

The specialty of general medicine covers training for general practice and family medicine.

In addition to the two stages of basic specialization, there are also some superspecialties covering highly specialized or narrow fields of medical science and practice, such as cardiology, nuclear medicine, occupational hygiene, social medicine and the organization of health services, and clinical oncology.

Training for public health is partially covered by the superspecialty of social medicine and the organization of health services (which also includes training for medical administration) and partially by hygiene and epidemiology, dermatovenereology, tuberculosis and respiratory diseases.

Training for occupational health is covered by the superspecialty occupational hygiene.

There are plans to try and decrease the number of subspecialties and superspecialties.

Content of training

The training requirements for each specialty are published in detail in a national medical journal.

For example, to complete the first stage of specialization in dermatovenereology the minimum period of 2.5 years' training must include two months in a department of paediatric dermatology, three months in a department of internal medicine and three months in a department of surgery. The requirements for specialist training also include a list of the theoretical and practical knowledge required of the candidate, e.g. itemization of the theoretical knowledge required in general dermatovenereology and special dermatovenereology, of the practical skills expected in dermatovenereology and of the theoretical knowledge acquired from other relevant disciplines.

Organization and control

The planning and control of specialist training are carried out by the Ministry of Health and Social Affairs, through the Institute for Postgraduate Education in Medicine and Pharmacy.

Criteria are laid down for the designation of training institutions or departments and for individual teachers. These require well organized and well managed departments with good technical equipment and facilities, and highly qualified staff.

Assessment

Specialist trainees are assessed by an official attestation commission established by the Institute. Examinations are both practical and theoretical, and the candidate is required to pass both parts.

Additional observations

Continuing education

Every doctor is required to attend a training programme once every three to five years, and he/she should attend a "functional course" before being promoted to a leading post. The control of competence is further ensured through a type of assessment called total assessment, which takes place in the form of a discussion at three-yearly intervals.

Research

Training for research is carried out in special institutions, under the control of selected specialists. There are two stages. The first stage is designed for younger specialists wishing to undertake their own research in a special field of study closely related to their medical practice. When their research is complete, candidates defend their conclusions before a commission and, if successful, obtain the title of Candidate of Sciences (C.Sc.). More senior specialists may continue their research at a higher level. After defending their conclusions, they may obtain the title of Doctor of Sciences (D.Sc.). These scientific titles are required for appointments at university-level institutions.

Table 1. First-degree specialization (2.5 years)

Main specialty (minimum 1.5 years)	Training required in other fields (months)
Internal medicine	Chest medicine (3) Surgery (3)
Paediatrics	Surgery (3) Community paediatrics (3)
Surgery	Internal medicine (3)
Gynaecology	Internal medicine (3) Surgery (3)
Neurology	Internal medicine (3) Surgery (2) Psychiatry (1)
Psychiatry	Internal medicine (3) Surgery (3)
Dermatovenereology	Internal medicine (3) Surgery (3)
Anaesthesiology and resuscitation	Internal medicine (3) Surgery (3)
Orthopaedics	Internal medicine (3) Surgery (4)
Urology	Internal medicine (2) Surgery (3) Anaesthesia (1)
Ophthalmology	Internal medicine (3) Surgery (3)
Otolaryngology	Internal medicine (3) Surgery (3)
Radiodiagnosis	Surgery (3)
Radiotherapy	Internal medicine (3) Surgery (3)
Pathology	Surgery (3)
Clinical biochemistry	Internal medicine (9) Surgery (3)
Medical microbiology	Surgery (3) Infectious diseases (2) Epidemiology (1) Paediatrics (1)

DENMARK

General arrangements

Basic medical education lasts 6.5 years, and is followed by 1.5 years of internship.

Training in the hospital-based specialties, community medicine and general practice may be undertaken by doctors who have obtained authorization as a physician and permission to practise independently as a physician under the Practice of Medicine Act.

In addition to general practice, there are 20 main specialties. The main specialties of internal medicine, surgery, neurology and community medicine have a number of subspecialties (see Table 1).

Stages of specialization and content of training

Training for the main specialties lasts at least 4.5 years, and comprises a fixed sequence of appointments: registrar in the specialty concerned for 1–2 years; trainee in certain departments of the specialty (1–2.5 years); possible supplementary training for 1–2 years; senior registrar, 1.5 years.

For subspecialties, the training comprises the first two elements of training for a main specialty (appointment as a registrar for 1–2 years and specialist trainee in certain departments for 1–2.5 years) followed by 3–4 years of subspecialist training.

Training also includes a theoretical course approved by the National Board of Health.

Training for general practice takes 3.5 years in addition to a basic clinical training of 1.5 years. The total training period of 5 years comprises: 12 months as a trainee or assistant working with a general practitioner; 18 months in internal medicine including dermatovenereology, neurology or paediatrics, and possibly 6 months in anaesthesiology with intensive care; 12 months in surgery and orthopaedics, including

not more than 6 months of subspecialized surgery or otorhinolaryngology; 6 months in obstetrics and gynaecology; 3 months in psychiatry and 9 months of optional appointments either in hospital or general practice. A wide range of options may be taken up, but for some a period of not more than 3 months is specified. There is also a theoretical course in general medicine of 150 lessons.

Organization and control

Specialist training is in paid appointments in hospital departments and institutions approved by the National Board of Health. Posts are advertised and may be obtained after application.

The National Board of Health lays down the rules for training in each specialty and determines the number of trainees in each specialty, on the basis of training capacity as well as the need for specialists. Training for general practice must take place in departments and general practices approved for the purpose by the National Board of Health.

Exemption from some training requirements may be granted, for example to physicians who began training before current orders became operative (i.e. before 1983), or who have obtained some training in other countries.

Table 1. Main specialties and subspecialties

Main specialty	Subspecialty
Anaesthesiology	
Child psychiatry	
Dermatovenereology	
Diagnostic radiology	
Gynaecology and obstetrics	
Internal medicine	Cardiology
	Hepatology
	Haematology
	Infectious medicine
	Long-term medicine and geriatrics
	Endocrinology and diabetes mellitus
	Gastroenterology
	Respiratory medicine
	Nephrology
	Rheumatology
	Tropical medicine
Surgery	Vascular surgery
	Gastroenterological surgery
	Plastic surgery
	Thoracic surgery
	Urology
Clinical physiology and nuclear medicine	
Clinical immunology	
Chemical pathology	
Medical microbiology	
Neurology	Clinical neurophysiology
	Neurosurgery
Ophthalmology	
Orthopaedic surgery	
Otorhinolaryngology	
Morbid anatomy and histopathology	
Psychiatry	
Paediatrics	
Community medicine	Community medicine/administrative medicine
	Community medicine/occupational medicine
Radiotherapy	

FINLAND

General arrangements

Basic medical education takes six years, followed by an internship of one year. After internship, the physician is allowed to practise medicine independently.

Specialization requires five years of training, and there is a further two years of training for subspecialties.

Stages of specialization

There are 32 main specialties and 57 subspecialties in Finland. About half of all doctors have a main specialty; fewer than 20% have a subspecialty as well.

General practice, public health and occupational health are all forms of specialist training.

Content of training

Specialist training includes periods of general training, specialist training, systematic course work and supervised duties, and ends with an examination in the specialty.

General training includes one year of service. The period of specialist training lasts for four years in a clinic or ward. At least two years must be served in a teaching hospital, most of which are university hospitals. In addition to practical experience, training includes systematic courses, guided work assignments and on-the-job training such as participation in medical meetings.

Organization and control

In 1986, responsibility for specialist education was transferred from the National Board of Health to the medical faculties of the universities with a central coordinating board.

The most common type of institution recognized for specialist training purposes is a university central hospital or a central hospital. Postgraduate teachers are usually professors or docents, or have completed a doctoral dissertation. There is no general selection procedure for trainees. The hospitals and health centres concerned select them for individual training posts.

Assessment

No generalized review system exists for training arrangements. A committee on specialties assesses the training arrangements in individual institutions when considering their applications for the right to have training places.

At the conclusion of the five years of training, a specialist examination must be passed. This covers the most important literature in the field, both general texts and journals.

Additional observations

Continuing education

Continuing education is voluntary in Finland. Participation in continuing education is therefore not a requirement for maintaining a specific appointment or specialization. According to the Public Health Act, however, all practitioners in public health work should receive continuing education at least once every five years. There is a similar stipulation in the Act on Occupational Health.

In practice, the requirements for continuing education are specified by various interested groups: the relevant specialist associations, the state and municipal authorities, the Finnish Medical Association, scientific organizations, etc. The content of continuing education is defined by those who organize it, and very much depends on current developments in medical science and the health service. It is thus not permanently fixed, but planned on a year by year basis.

Research

Scientific postgraduate studies lead to the degree of Doctor of Medicine. These studies are completely separate from clinical specialist training.

FRANCE

General arrangements

At the end of six years of basic medical education and after having passed the relevant examinations, students enter the third or final cycle of medical education. This is compulsory for all doctors, but there are several streams.

Students have free access to the general medicine stream. Those who wish to pursue specialist training must undergo a selection examination.

Stages of specialization

Depending on their examination rating and their choice, students who wish to pursue specialist training may be enrolled in one of four streams:

— medicine;
— surgery;
— medical biology;
— psychiatry.

Within each stream, students may prepare themselves for various diplomas in specialized studies such as internal medicine, traumatic and orthopaedic surgery, and community health and social medicine.

Content of training

Each training programme has a theoretical and a clinical component approved by the Ministers of Health and Education. Training takes four or five years, full time. It is mainly carried out within the hospital services of the specialty concerned, but some part of the training is undertaken in relevant complementary disciplines.

Subspecialization is available in a number of disciplines, and students may prepare for additional diplomas in complementary specialized studies. This additional training again comprises theoretical and clinical elements over a period of two years, full time.

A list of specialties, under the headings of medicine, surgery, etc., as well as a list of complementary subspecialties are given in Tables 1 and 2.

Organization and control

The number of students admitted to enter each stream of specialist training and the number of diplomas in specialized studies granted in each discipline are fixed every year by the Ministers of Health and Education, on the basis of the health needs of the population, the need to remedy geographical inequalities and the capacity of the various hospitals and their staff, particularly the university hospitals, to provide training. Every year, the Ministries establish a list of accredited hospital and nonhospital services for training as well as the number of trainees (interns) who may be assigned to each of them. In making these decisions, they take the advice of regional commissions, interregional technical and academic commissions, and a national commission. They also take account of the economic consequences of the availability of and demand for health care.

Assessment

The knowledge acquired by the trainees is assessed during specialist training. On satisfactory completion of training, the national degree of Doctor of Medicine is awarded together with an additional title specifying the type of specialized training received.

Training programmes are largely homogeneous throughout the country under the guidance of the Ministry of Education.

Additional observations

General medicine

Students choosing general medicine pursue a course of clinical and theoretical study involving the duties and responsibilities of internship in university or non-university hospitals, in health services outside the hospital and under the supervision of selected practitioners. This training takes two years, and leads to a diploma of Doctor of Medicine with the title *médecin généraliste*.

Continuing education

Continuing education is organized for doctors by their professional associations. The state participates in the cost of this continuing education. Research training is poorly developed for practising physicians.

Organization

The organization of medical studies as described above is recent, the relevant law having been enacted in December 1982. Its main impact is to place an obligation on all students of medicine to acquire a specific training either in general medicine or in a medical specialty, including the recently established specialties of public health and research. At the same time, French regions are requested to determine the desirable number of students in the specialties, taking into account both health needs and training capacity. Since 1970, the Ministries of Health and Education have determined the number of medical students allowed to enter the second year of basic medical education. In accordance with the 1982 law, the state now also controls the numbers entering each branch of specialization. For the present, a ratio of 60% generalists to 40% specialists among practising physicians is considered desirable.

Table 1. Diplomas in specialized studies

Stream	Specialty
Medical specialties	Pathological anatomy and cytology
	Anaesthesiology and surgical reanimation
	Cardiovascular diseases
	Dermatology and venereology
	Endocrinology and metabolic disorders
	Gastroenterology and hepatology
	Internal medicine
	Nephrology
	Neurology
	Occupational medicine
	Paediatric medicine
	Psychiatry
	Pneumology
	Public health and social medicine
	Radiodiagnostic medicine
	Radiotherapeutic medicine
	Rehabilitation and functional readaptation
	Rheumatology

Table 1 (contd)

Stream	Specialty
Surgical specialties	Paediatric surgery
	Orthopaedic and traumatological surgery
	Thoracic and cardiovascular surgery
	Urology
	Visceral surgery
	Obstetrics and gynaecology
	Neurosurgery
	Ophthalmology
	Otorhinolaryngology
	Stomatology
Medical biology	Medical biology
Psychiatry	Psychiatry

Table 2. Diplomas in complementary specialized studies

Cancerology
Plastic and reconstructive surgery
Cervicomaxillofacial surgery
Vascular surgery
Haematology and blood disorders
Haemobiology and transfusions
Immunology and immunopathology
Infectious diseases and tropical medicine
Nuclear medicine
Reproduction and medical gynaecology
Nutrition
Child and adolescent psychiatry
Medical reanimation
Forensic medicine

GERMAN DEMOCRATIC REPUBLIC

General arrangements

One year of nursing practice is required before entry into basic medical education, which takes six years including internship. At the conclusion of internship, the degree of *Diplom-Mediziner* is awarded.

Stages of specialization

After graduation as *Diplom-Mediziner*, every physician is expected to undergo four to five years of training. This is primary specialization. The system is the same for the hospital-based specialties, the laboratory and nonclinical specialties (i.e. anatomy, hygiene, occupational medicine, public health) and general practice. There are 32 primary specialties for physicians and 4 specialties for dentists. At the conclusion of primary specialization, there is a final examination leading to a degree as specialist (*Facharzt*).

Secondary specialization, or subspecialization in a narrow field of a specialty, may be undertaken after the conclusion of primary specialization. There are 15 such subspecialties: for instance, internal medicine has subspecialties in diabetology, gastroenterology, cardiology, clinical pharmacology and rheumatology. Such training leads to the degree of *Subspezialist*.

Content of training

In general, basic specialist training takes four to five years for all specialties, depending on the knowledge, skills and attitudes to be acquired. Training follows a standard educational programme for each specialty authorized by the Minister of Health. The general principles of medical and social education are included in the training for all specialties, and for the hospital specialties training includes a period of time spent in outpatient care.

Organization and control

The overall planning and control of all postgraduate training is carried out by the Academy for Postgraduate Medical Training under instructions from the Ministry of Health.

The selection of trainees is based on the health needs of the population, as reflected in the appropriate proportions of physicians in different specialties, and especially by demand in the primary health care sector. The special interests of the physician are also taken into account.

In the designation of training institutions, there is a wide variety of criteria between different specialties. The main factors are the quality of work, the qualifications of staff and available equipment.

Assessment

There are two levels of assessment. At the central state level, the Academy for Postgraduate Medical Training has central committees of experts for each specialty. At the district level, there are expert committees for general practice, general dentistry, surgery, gynaecology and obstetrics, internal medicine, paediatrics and children's dentistry.

These committees examine physicians at the conclusion of specialist training, theoretical and practical, and district health officers register them as specialists.

Additional observations

Continuing education

Continuing education courses are organized by the Academy for Postgraduate Medical Training (220 such courses were organized in 1984 with 12 786 participants) and by the District Academies for Training of Health Personnel. The latter are also responsible for the training of auxiliaries and for a portion of the postgraduate training of physicians. Medical scientific societies organize courses and congresses. Physicians also attend lectures, practical training sessions, etc. as guest students in medical schools and specialized hospitals where they may also observe specialized procedures and techniques.

In addition, there is a new type of continuing education, "resident group study". Every physician has the right to be a guest student for two or three weeks every four to five years in a specialized hospital, institute or outpatient facility. Special programmes are prepared, including lectures, discussions, demonstrations and practical training. They also have the opportunity to review their knowledge and skills, and to make specific recommendations concerning self-education.

Medical administration

Medical administration is regarded as part of every specialization. For leading physicians, there are three types of specialized training in administration: six-month courses for area health administrators (*Kreisärzte*); one-year correspondence courses for leading hospital physicians of districts and areas; a cycle of one- to two-week courses every two years for both groups.

The future

The main plans and tasks for the immediate future are:

- to increase and improve the education of all hospital specialists;
- to institute systematic training for all tutors involved in the training of specialists;
- to provide more opportunities for research training; and
- to improve the continuing education of physicians in all specialties by setting up centres for continuing education at the district level.

FEDERAL REPUBLIC OF GERMANY

General arrangements

Basic medical education takes six years, including one year of full-time internship (internal medicine, surgery and an elective period). *Approbation* after these six years is a prerequisite for any kind of clinical work, postgraduate training and general practice.

The law relating to medical education is under revision; it is likely that in the near future the undergraduate curriculum will last 7.5 years, including a 3-year internship, and part of this longer internship period may be credited toward the training requirements for a specialty.

Postgraduate specialist training may begin immediately after internship. For each specialty, a minimum length of full-time training is specified in the main discipline and in related disciplines. As a general rule, specialist training takes place in accredited hospitals.

For general practice, two methods of entry are possible:

(*a*) postgraduate training for 18 months in disciplines or areas that are recognized for registration as a *Kassenarzt* (general practitioner within the health insurance scheme);

(*b*) postgraduate training of four years' duration similar to that for a hospital specialty, including a minimum of one year of internal medicine and six months of surgery, leading to the title *Arzt für Allgemeinmedizin* (this automatically fulfils the requirements for *Kassenarzt*).

The two forms of preparation for general practice have no effect on subsequent working conditions or remuneration. Fewer than 10% of those entering general practice do so through the four-year training programme.

Stages of specialization

There are no plans to introduce more than one level of specialization, except that there are subspecialties (e.g. cardiac surgery) which may

require total or partial fulfilment of the requirements of the main specialty (e.g. surgery).

Content of training

The required length of training varies from discipline to discipline, with a minimum of three years. The number and duration of periods to be spent in related disciplines also depend on the specialty.

Training is essentially carried out on the job. Participation in research is not required, and other academic involvement such as in clinical conferences, lectures and seminars within and outside the hospital is also optional. Relatively few lectures and seminars occur within the hospital.

Organization and control

Regulations determining postgraduate training are formally issued by the health ministries of the federal states (*Länder*). Responsibility for implementing them lies with the physicians' associations of the *Länder* (*Landesärztekammer*). In practice, these associations prepare and propose the regulations which are issued by the *Länder*. Informal coordination between the *Länder* is achieved through a federal *Bundesärztekammer*.

The physicians' association of each *Land* creates specialty boards (*Prüfungsausschüsse*) for each individual discipline. These determine the criteria for the accreditation of training institutions, and they also carry out the licensing procedure for candidates. Universities are not involved in the control of postgraduate training, although individual professors may be members of the specialty boards.

The accreditation of training institutions is linked to the person of the chief physician in each specialty. In addition, such physicians select the candidates who will be trained in their departments. The number of years of training under the chief physician's supervision that may count towards the trainee's qualification is specifically designated. Whether all or part of the training period counts is largely related to the number of beds and the scientific and technical calibre of the department.

Assessment

Training arrangements are reviewed by the specialty boards and physicians' associations in each *Land*.

Trainees are assessed on the basis of the training programme they have followed and the chief physician's reports. Promotion during training is linked to written reports from the chief physician at the end of each work period in a particular department. Assessment also includes a 30-minute oral examination conducted locally.

Additional observations

Continuing education

Continuing education is optional, and there are currently no arrangements for the periodic review of competence, nor is this officially foreseen. Quality control mechanisms are, however, developing within some disciplines (e.g. clinical chemistry and surgery) on an intraprofessional basis.

The future

The regulations affecting access to training in general practice may change. Such decisions are likely to be influenced by national considerations of the need for physicians and by European Community regulations. In the hospital-based specialties, some new disciplines may be recognized (e.g. rheumatology) but basic changes in the structure and content of specialist training are unlikely in the near future.

GREECE

General arrangements

Basic medical education takes six years. After graduation, training for the hospital-based specialties takes four to six years. Training for the specialty of general practice, which was reorganized in 1985, takes three years and puts particular emphasis on the community and primary health care.

Postgraduate training is not obligatory; medical graduates may practise medicine without obtaining a specialist qualification.

Stages of specialization and content of training

In some specialties, the whole period of training may be spent in the specialty itself. In other specialties, periods of time must be spent in related specialties. For example, training in internal medicine consists of 5 years in internal medicine; in cardiology, training consists of 1 year of internal medicine and 3 years of cardiology. General surgery training comprises 3.5 years of general surgery and 1.5 years in other surgical specialties; for orthopaedics, 1 year in general surgery, 1 year in other surgical specialties and 3 years in orthopaedics are required.

Training in public health consists of a one-year course in the Athens School of Hygiene; for occupational medicine, a four-year training programme was introduced in 1986.

A number of additional specialties have been officially recognized in the last few years. Table 1 shows a number of specialties not included in Tables 2 and 3 in Part II.

Trainees work in paid hospital appointments during training. They acquire increasing responsibility for the care of patients and participate in lectures, scientific meetings and seminars.

Organization and control

Responsibility for the supervision of specialist training lies with the Ministry of Health, Welfare and Social Security, but the Ministry is required to seek the opinion of the Central Health Council on all matters concerning specialty training.

Training departments are recognized according to the facilities available: number of beds and of cases treated and the qualifications of trainers. Recognition is granted by the Ministry on the basis of the opinion of the Central Health Council. There are no specific criteria for the selection of trainers.

Assessment

Trainees are assessed at the end of their training by oral and practical examinations, which are carried out by a committee whose members are appointed by the Ministry of Health, Welfare and Social Security following nominations from the Central Health Council.

Additional observations

Continuing education

Continuing education is the responsibility of the individual doctor. It is carried out through scientific medical associations, hospitals and departments. The introduction of more formal methods of continuing education is currently being considered.

Table 1. Specialties not included in Tables 2 and 3 (Part II)

Main specialty	No. of years required for training in this specialty	Does this include internship?	From total given in first column		Type of examination		
			Minimum period of training required in the specialty itself (years)	Training required in other fields (years)	Oral	Written	Practical/ clinical
Allergology	5	No	3	2	Yes	No	Yes
Endocrinology	6	No	4	2	Yes	No	Yes
Gastroenterology	6	No	4	2	Yes	No	Yes
Nephrology	6	No	4	2	Yes	No	Yes
Nuclear medicine	4	No	3	1	Yes	No	Yes
Paediatric psychiatry	4	No	2	2	Yes	No	Yes
Paediatric surgery	7	No	3	4	Yes	No	Yes
Plastic surgery	6	No	3	3	Yes	No	Yes
Physiotherapy and rehabilitation	4	No	2.5	1.5	Yes	No	Yes
Rheumatology	4	No	4	-	Yes	No	Yes

HUNGARY

General arrangements

After completing basic medical education and obtaining the university diploma, specialization may be obtained under the terms of the examination committee established by the national board of specialization for medicine, dentistry and pharmacy. This is a board of the Postgraduate Medical School, which is responsible for the postgraduate university education of physicians, dentists and pharmacists. The organizational and functional statutes of the Postgraduate Medical School and of the national board are approved by the Ministry of Social Affairs and Health.

Stages of specialization

Primary specialization may be achieved after a four- to five-year training period in appropriate clinics, hospital wards or medical services, and after satisfactory completion of obligatory courses organized by the Postgraduate Medical School. Primary specialization is available in 29 disciplines.

Secondary specialization may be achieved after a two- to three-year training period following the completion of an appropriate primary specialization. Training is carried out in specialized clinics or medical institutions accredited by the national board. Secondary specialization is available in 28 disciplines.

Content of training

Tables 1 and 2 give details of the required periods of training in the specialty disciplines and in related disciplines for both primary and secondary specialization.

Organization and control

At the commencement of specialist training, candidates must be registered by the Department of Education of the Postgraduate Medical School in Budapest. They receive detailed information about the theoretical and practical knowledge needed to comply with the requirements of the examination committee of the national board.

Assessment

In addition to attendance at compulsory courses, trainees are obliged to demonstrate their progress and level of understanding through examinations. At the end of the training period, there is a practical and theoretical examination conducted by the three-member examination committee appointed by the national board. The members of the national board are appointed by the Ministry of Social Affairs and Health. The practical examination extends over a period of two weeks, and there is an oral examination in which the trainee is examined by professors.

Success in the examination and satisfactory completion of training are certified by the issuance of a diploma signed by the president of the national board and the Rector of the Postgraduate Medical School.

Additional observations

Continuing education is obligatory for both specialists and nonspecialists, at five-yearly intervals.

Foreigners wishing to obtain specialization in Hungary may obtain full information about the requirements from the national board.

Table 1. Training for primary specialization

Specialty	Training period (years)	Special training and obligatory courses (months)
Anaesthesiology and intensive care	4	Internal medicine (3) Ambulance station, transfusiology (3)
General practice (district doctor)	5	Internal medicine (6) Paediatrics (3) Public health and hygiene station (1)
Internal medicine	5	Infectious diseases (3) In district (5) Clinical laboratory, electrocardiography, transfusiology (1)
Dermatology and venereal diseases	4	Welfare station, transfusiology (12)
Paediatrics	4	Infectious diseases (3) In district, neonatology, transfusiology (3)
Infectious diseases	4	Internal medicine (3) Paediatrics (3) In district (3) Hygiene and microbiology, transfusiology (2)
Dentistry	4	Child welfare station (12)
Otorhinolaryngology	4	Outpatient department, audiology, transfusiology (6)
Forensic medicine	4	Internal medicine (4) Traumatology (2) National Institute of Forensic Medicine (1) Psychiatry (2)
Clinical laboratory investigations	4	Internal medicine or paediatrics (3) Microbiological laboratory, transfusiology (3)
Hygiene and epidemiology	4	Infectious diseases (3) Hygiene laboratory (3)
Laboratory investigations in hygiene and epidemiology	4	Hygiene medical service (4) Clinical laboratory (3)
Neurology	4	Outpatient department, electroencephalography, transfusiology (6)

Table 1 (contd)

Specialty	Training period (years)	Special training and obligatory courses (months)
Orthopaedics	4	General surgery (3) Outpatient department, transfusiology (3)
Oxyology	4	Internal medicine (3) Intensive care (3) Traumatology (3) Paediatrics, transfusiology (3)
Psychiatry	4	Outpatient department (3) Psychiatric welfare, electroencephalography, transfusiology (3)
Radiology	4	Internal medicine (6) General surgery, or traumatology (3)
Aviation medicine	4	Fitness-checking station for aircrew (6)
Rheumatology and physiotherapy	4	Internal medicine (6) In district, transfusiology (3)
Surgery	4	Traumatology (6) Outpatient department, transfusiology (6)
Sports medicine	4	Internal medicine (3) Traumatology (3) Outpatient department for physiotherapy, transfusiology (3)
Ophthalmology	4	Outpatient department (6)
Obstetrics and gynaecology	4	General surgery (6) Outpatient department and mother welfare, transfusiology, neonatology (3)
Social medicine	4	In district and occupational hygiene (3)
Transfusiology	4	Internal medicine, or paediatrics, or clinical laboratory (1) National Institute of Blood Transfusion, clinical haematology, immunology (6)
Pulmonology	4	Outpatient department for pulmonology (2) Cardiology (2) In district (2) Clinical laboratory, transfusiology (1)
Urology	4	General surgery (3) Outpatient department, transfusiology (3)
Occupational hygiene	4	Internal medicine (5) Traumatology (1) Department for Hygiene and Epidemiology, oxyology (2)
Pathology and pathohistology	4	Internal medicine, or surgical ward (6)

Table 2. Training for secondary specialization

Specialty	Training period (years)	Ward, department or institution assigned for training (months)	Primary specialization required
Audiology	2	Outpatient department	Otorhinolaryngology
Child otorhino-laryngology	2	Special ward (2) General paediatrics (2)	Otorhinolaryngology
Child cardiology	2	Special ward in children's hospital Outpatient department for cardiology (3)	Paediatrics
Endocrinology	2	Special ward in internal medicine	Internal medicine
Vascular surgery	2	Special ward in surgery unit	General surgery
Infectious diseases	2	Special ward in general hospital for infectious diseases	Internal medicine Paediatrics General practice Occupational hygiene
Phoniatrics	2	Special station for phoniatrics	Otorhinolaryngology
Gastroenterology	2	Special ward for gastro-intestinal disorders	Internal medicine
Child gynaecology	2	Children's gynaecological ward (12) Gynaecology (24)	Paediatrics
		Children's gynaecological ward (24) Gynaecology (12)	Gynaecology and obstetrics
Child psychiatry and neurology	2	Child psychiatry (18)	Paediatrics
		Outpatient department (6) Paediatrics (3)	Psychiatry
Child surgery	3	Child surgery (24) Paediatrics (12)	Surgery
		Child surgery (24) General surgery (12)	Paediatrics
Child pulmonology	2	Special ward for child pulmonology	Paediatrics
Haematology	2	National Institute for Haematology (24)	Internal medicine Paediatrics Clinical laboratory investigations

Table 2 (contd)

Specialty	Training period (years)	Ward, department or institution assigned for training (months)	Primary specialization required
Forensic psychiatry	3	Activity under appointed forensic psychiatric supervisor	Psychiatry
Brain surgery	3	Brain surgery (24) Neurology (12)	Surgery
		Brain surgery (24) Surgery (12)	Neurology
Medical superintendent of schools	2	School medical service	Paediatrics Internal medicine
Isotope diagnostics	2	Special diagnostic unit	Radiology Clinical discipline Clinical laboratory investigations
Cardiology	2	Special ward Outpatient department (3)	Internal medicine
		Internal medicine (12) Cardiology (3)	Pulmonology
Clinical pharmacology	2	Activity in the state clinical pharmacological programme	All primary clinical disciplines
Clinical oncology	2	National Institute for Oncology and special hospital ward (6)	All primary clinical disciplines
Chest surgery	2	Special chest surgery ward	Surgery
Clinical microbiology	2	Special diagnostic laboratory	Clinical laboratory investigations Laboratory investigations for hygiene and epidemiology
Oncoradiology	2 3	Special ward Special ward	Radiology Surgery Obstetrics and gynaecology Paediatrics Other clinical disciplines with permission

Table 2 (contd)

Specialty	Training period (years)	Ward, department or institution assigned for training (months)	Primary specialization required
	4	X-ray diagnostic, oncological ward (24) X-ray therapy (24)	May be taken as primary specialization
Plastic surgery	2	Special ward	Traumatology Surgery
Aviation medicine	2	Special fitness-checking station for aircrew	All clinical primary specializations
Rheumatology and physiotherapy	2	Special ward and outpatient department	Internal medicine Occupational hygiene Orthopaedics Surgery General practice
Sports medicine	2	Special ward and outpatient department for sports medicine	All clinical primary specializations
Oral surgery	2	Special ward Dentistry (3)	Surgery
	3	Special ward (24) Surgery or traumatology (12)	Dentistry
Cardiac surgery	2	Special ward (24) Cardiology (12)	Surgery
		Special ward (24) Surgery (12)	Cardiology
Tropical medicine	2	Institute for Tropical Medicine	Internal medicine Infectious diseases
Pulmonology	2	Special ward	Internal medicine
Traumatology	2	Special ward Neurosurgery (2)	Surgery
Occupational hygiene	2	Institute for Occupational Hygiene Traumatology (1) Laboratory for hygiene and epidemiology (1)	Internal medicine General practice

ICELAND

For information on Iceland, see Tables 1, 2 and 3 in Part II.

IRELAND

General arrangements

After graduation in medicine at the end of six years of basic undergraduate medical education, all graduates are required to serve for one year as interns. This internship consists of six months' general experience in medicine and six months' general experience in surgery, including experience in medical and surgical emergencies. Full registration as a medical practitioner is granted when the intern year is satisfactorily concluded.

After the intern year, training for the hospital-based specialties takes a total of about six to eight years.

The minimum postgraduate training requirement for doctors entering general practice after 1 July 1982 is two years.

The aim of postgraduate training is to achieve accreditation — i.e. certification by the appropriate professional body that the trainee has satisfactorily completed the full and approved course of training and is suitably qualified and experienced to assume independent clinical responsibility.

Stages of specialization

In the specialties other than general practice, training is divided into two periods which are usually referred to as general professional training and higher specialist training. The normal pattern is a three-year period of general professional training followed by three to five years of higher specialist training.

Content of training

Training requirements are specified for each individual specialty. The hospital-based specialties are grouped in seven main divisions: anaesthetics, medicine, obstetrics and gynaecology, pathology, psychiatry,

radiology and surgery. There are subdivisions of some of these specialties (26 in medicine, 4 in obstetrics and gynaecology, 5 in psychiatry, 2 in radiology and 9 in surgery), so that in total there are about 50 specialties and subspecialties.

The requirements for general professional training in the main hospital-based specialties, as well as general practice and community medicine, are explained below.

Medicine

In the medical specialties, general professional training ordinarily takes three years after registration. The Royal College of Physicians of Ireland requires that the training should be obtained in posts approved for the purpose, but does not lay down rigid regulations for the training of medical specialists. For example, a proportion of the time may be spent in general practice, research, etc. It recognizes that during the early years after graduation doctors may spend all or much of their time in their chosen branch of medicine, or alternatively may explore several branches. In any case physicians should not specialize in one of the special areas of medicine until they have demonstrated their competence in medicine by obtaining the Membership of the Royal College of Physicians of Ireland (MRCPI).

In paediatrics, general professional training should primarily be a training in the general medicine of children and adults and should normally take two or three years after completion of the intern year. This training should largely be in approved posts giving broad experience of hospital medicine including emergency work. It must include a post of at least six months' duration in a children's hospital or the children's department of a general hospital.

Surgery

The Royal College of Surgeons in Ireland requires a total of four years' experience after graduation (including the intern year) before its Fellowship Examination may be attempted. A substantial part of this experience must be gained in posts approved specifically for this purpose by the College. A list of approved hospitals is available. Fellowship requirements as regards training must be met before higher surgical training can commence, although it is not necessary to have passed the Fellowship Examination. To be accredited, however, at the end of higher surgical training the Fellowship of the Royal College of Surgeons (FRCSI) is required. Of the training period (three to five years) required for higher surgical training in the specialties of surgery, 6–12 months (depending on

the specialty) may be spent in a university department or other approved centre, working in one of the basic sciences or in research relevant to the specialty.

Obstetrics and gynaecology

The Institute of Obstetricians and Gynaecologists of the Royal College of Physicians of Ireland requires that one of the three years of general professional training should be devoted to a branch of clinical medicine other than obstetrics and gynaecology, or to supervised experience or research in disciplines such as anatomy, biochemistry, pathology or physiology.

Radiology

The Faculty of Radiologists requires that candidates should have at least one year's clinical experience after full registration before entering training in radiology.

Anaesthetics

The Faculty of Anaesthetists requires three years in anaesthesia post-registration, before being eligible to sit the Fellowship examination. Of this, a period of six months can be spent in a related medical position.

Pathology

The Royal College of Pathologists strongly recommends that aspiring pathologists be encouraged to spend 6–12 months in hospital appointments in an appropriate clinical specialty, such as metabolic diseases, before starting their training in pathology. This must be undertaken in recognized laboratories. Additional experience in clinical work or in related basic sciences may also be accepted for part of this training period. Trainees intending to specialize in haematology, however, should spend one of the three years in an appointment in general medicine. The Faculty of Pathology of the Royal College of Physicians of Ireland is the Irish body recognized by the Postgraduate Medical and Dental Board, and it works closely with the Royal College of Pathologists.

Psychiatry

General professional training in psychiatry lasts three years and has two components, namely in-service training in hospitals or units approved by

the Irish Psychiatric Training Committee and a didactic three-year day-release programme organized on a regional basis by the three regional committees of the Training Committee. Much of the general professional training period should involve supervised experience of the assessment and management of patients of all ages suffering from disorders representative of the whole range of psychiatric practice. The in-service programme involves rotation through the various modules of general psychiatry and the specialties of child and adolescent psychiatry, mental handicap and forensic psychiatry. Provision must also be made for training in psychotherapy. Provision is made for trainees who have sought prior approval to spend part of their general professional training in other fields of medicine including research.

Community medicine

The Faculty of Community Medicine requires that clinical training continue for at least one year after registration, and may include experience in general practice. The subsequent two years of general professional training will normally contain at least one year in approved clinical, administrative, academic, or combined/rotating posts and one year in an approved post in community medicine.

General practice

The minimum requirement for entry to the general medical service (Choice of Doctor Scheme) by doctors who began full-time general practice after 1 July 1982 is two years' experience after full registration in the Medical Register. This must comprise two elements.

(*a*) Six-months' experience in full-time general practice. While this should be in an established practice, it is recognized that this may not in all cases be possible. The six-months' experience need not be continuous but must be full time. Experience gained in short-term loci, in a locum bureau or in employment otherwise than as a full-time general practitioner will not count towards the aggregate of six months.

(*b*) Periods of six months' hospital experience in each of any three of the following specialties (or three months in the case of participants in a recognized vocational training scheme): accident and emergency medicine or general surgery, general medicine, geriatric medicine, obstetrics and/or gynaecology, paediatrics, psychiatry. Either general medicine or paediatrics is compulsory.

Organization and control

For general professional training, programmes are laid down by the appropriate Royal College or other training body. For higher specialist training, programmes are laid down by the appropriate Irish training body or, in most specialties, by a joint committee representing Ireland, England and Wales, Scotland, and Northern Ireland. Criteria for training in general practice are determined by the Irish College of General Practitioners. Although the minimum requirement is two years of training, the College recommends that vocational training should be undertaken for at least three years in hospital posts and in general practices approved for the purpose.

Training in the hospital specialties takes place in paid appointments to posts which are approved for training by the appropriate Royal College or faculty. Such posts may be suitable both for those intending to make a career in a particular specialty and for those aiming at a different branch of medicine for which the experience is valuable. For example, a post in paediatrics might be accepted as part of training not only in paediatrics but in general medicine or psychiatry and as part of a vocational training scheme for general practice. Doctors therefore need not necessarily choose their future career immediately after graduation, although undue delay in decision-making may lead to the overall prolongation of their training.

Trainees are selected differently according to the specialty. In medicine, obstetrics and gynaecology, and pathology, applicants for training posts are selected by the individual hospital authorities in which the posts exist. In anaesthetics, psychiatry, surgery and general practice, there are regional training committees which select and/or assess trainees in the early stages of general professional training. In radiology, where the need for trainees is small, about eight trainees are selected every two years by the appropriate training body on which the hospitals concerned with training are represented. About 33 doctors a year enter clinical training schemes in general surgery and the surgical specialties. About 28 trainees are selected each year to enter the five regional vocational training schemes for general practice.

Selection for higher specialist training again varies somewhat according to specialty. There is no automatic progression from general professional training to higher specialist training; posts in higher specialist training schemes are advertised as they become available.

In general, the organization of postgraduate training is a responsibility of committees of the universities and the Royal Colleges, with representation from the medical profession and the Department of Health.

Assessment

As well as continuous assessment during the course of clinical and practical training, specialist examinations are set by the Royal Colleges and faculties.

Additional observations

Continuing education

Continuing education is extensively organized by various academic bodies and professional organizations. The Postgraduate Medical and Dental Board of Ireland has a statutory role in encouraging and providing continuing education.

ISRAEL

General arrangements

Israel has four medical schools producing about 300 graduates a year. In addition, many Israelis return from medical undergraduate studies in European countries.

All medical graduates must complete one year of general rotating internship to become licensed to practise medicine in Israel.

Stages of specialization

Medical specialization requires four to six years of training recognized by the Scientific Council of the Israeli Medical Association. In many fields of specialization, one or two years of training abroad are considered desirable.

Content of training

For most hospital-based specialties, training comprises four years of clinical training and one year in basic science or laboratory work. For the surgical specialties training tends to take longer, as pathology is also required, and for neurosurgery the training includes neurology as well as general surgery.

For family medicine, a four-year rotational programme is based on the candidate's interests. This includes work in supervised clinical settings such as medical clinics approved for family practice training.

Organization and control

Trainees are selected by application to the Scientific Council of the Israeli Medical Association and to the specific training department. The Council also determines the approval of departments for training and the length of training.

Assessment

Trainees are assessed by written and oral examinations for specialty certification. These examinations are set by the Scientific Council of the Israeli Medical Association and are in two stages: a preliminary one, after a minimum of two years of post-internship training, and a final one at the completion of the full specialty training period. On completion of all the requirements, specialty licences are issued by the Ministry of Health to those candidates recommended by the Scientific Council of the Israeli Medical Association.

The Scientific Council conducts periodic reviews and, for example, considers applications for the recognition of new specialties (such as geriatrics) and awards recognized academic status to new training departments (such as approving public health offices for public health training).

For hospitals to acquire academic affiliation with medical schools the doctors in the hospitals need academic status. A departmental senior physician must reach at least the status of associate professor, which requires the approval of the Academic Promotions Committees of the universities involved. For both clinical and non-clinical specialties this is based mainly on publications in recognized national and international journals. The quality of the articles, the number of references, teaching performance and clinical work are all taken into account in such evaluations.

Additional observations

Competence

Periodic reviews of competence are not formally established in Israel apart from continuous peer review and the application procedures for job promotion or academic status. Doctors applying for positions in hospitals or with various sickness funds (Kupat Holim) must demonstrate a career development appropriate to their specialties and the position they seek. This includes evidence of publications and other continuing professional activities.

Internal medicine

Specialization in internal medicine has recently been reduced to four years, after which anyone desiring specialist recognition in a subspecialty such as haemotology, cardiology, etc. must undertake the relevant training for a further 2–2.5 years.

Family practice

Family practice training has assumed new importance in recent years and takes four years. Family practice was recognized by the Council in 1978 and there are now about 250 physicians in training. Physicians seek to specialize in this field in order to find better positions in primary health care in Israel.

Public health

Public health specialization takes four years. In addition to clinical experience, public health trainees must undertake field work in a recognized public health setting. They must also complete the degree of Master of Public Health, which includes a substantial research project and a thesis. Master of Public Health degrees are given by the School of Public Health and Community Medicine of the Hebrew University, Jerusalem, on the basis of either part-time studies (three days a week) over a two-year period or a full-time international course conducted in English over a 13-month period.

Occupational health

Occupational health is a sub-branch of public health and needs to be further developed in Israel. This will depend, however, on the modernization of training departments which are now in a state of flux.

Medical administration

Medical administration is also recognized as a branch of public health which needs further development in Israel. Health administration programmes exist at the University Centre for Health Sciences, Beersheva; at the Department of Public Administration, Tel Aviv University, in conjunction with the Medical Faculty; at the Technion in Haifa; and, to some extent, at the School of Public Health and Community Medicine, Hebrew University, Jerusalem. The Ministry of Health itself has placed greater emphasis in recent years on training in this field, both for medical and non-medical administrators. It organizes short courses and sends people abroad for training.

Geriatrics

Geriatrics was recognized as a specialty in 1980 and training in this field has begun, although there is room for improvement.

ITALY

General arrangements

The general arrangements for undergraduate and postgraduate medical studies are undergoing revision. At present, basic medical education takes six years. There is a six-month internship, which may be included in the final year of basic medical education. After a state examination, physicians are entitled to enter directly into general medical practice.

Stages of specialization and content of training

The education and training of specialists normally take four years, of which two years are taken up mainly by theoretical instruction, and two years are dedicated mainly to practical training in hospitals. Second-degree specialization may be obtained without necessarily undergoing an additional full period of four years: for example, the appropriate school boards may allow some reduction in theoretical and practical training for specialization in neurosurgery if the trainee is already a specialist in general surgery.

Organization and control

All medical postgraduate specialization is a responsibility of the universities, under the overall control of the Ministry of Education which approves the curricula.

Although admission to undergraduate medical education is still unlimited, the number of trainees admitted to specialist training is limited. Selection is based on written and oral examinations.

Assessment

Promotion during training is based on yearly examinations, both theoretical and practical. Certification at the conclusion of training is

based on the defence of a written thesis. University certification has legal status, and specialists are therefore registered by the Medical Orders.

Additional observations

Continuing education

There are no formally organized plans or programmes of continuing education for specialists. Nevertheless, each academy or society — e.g. of radiologists or paediatricians — arranges continuing education in a variety of ways, through meetings, seminars, round-table discussions, specialist journals, etc. For the last few years, the regional administrations of the National Health Service have given financial support to this form of continuing education, but the responsibility for arrangements and programmes lies with each individual specialist group or society.

LUXEMBOURG

General arrangements

Luxembourg provides only the first year of medical studies, which enables students to continue their medical education in other European countries.

Luxembourg citizens must therefore obtain their undergraduate medical education and specialist training in another Member State of the European Community, or in a country considered acceptable by the Luxembourg authorities for undergraduate training and specialist training. This training must comply with certain regulations: more particularly, in order to be allowed to practise in Luxembourg, the candidate must possess a diploma, certificate or title of physician and/or specialist in the discipline concerned issued by the country in which the training has taken place. Luxembourg recognizes 33 specialties.

The minimum duration of training undertaken in a European Community Member State is governed by European Community Directive No. 75/363/EEC. If training is undertaken in a country acceptable to Luxembourg but outside the European Community, the minimum duration is as shown in Table 1.

Table 1. Training in a non-European Community country

Specialty	Minimum period of training required (years)
Anaesthesiology/reanimation	4
General surgery	6
Thoracic surgery	6
Cardiovascular surgery	6
Neurosurgery	6
Orthopaedics	5
Otorhinolaryngology	4
Internal medicine	5
Cardiology	4
Neurology	4
Obstetrics/gynaecology	4
Ophthalmology	4
Morbid anatomy	4
Biological chemistry	4
Haematology	6[a]
Microbiology	4
Paediatrics	4
Psychiatry	4
Radiodiagnostic procedures	4
Radiotherapy	4
Urology	6
Gastroenterology	4
Paediatric surgery	6
Plastic surgery	6
Biological haematology	4
Endocrinology	6[a]
Nephrology	6[a]
Pneumology/tuberculosis	5
Rheumatology	5
Child psychiatry	4
Functional rehabilitation	3
Stomatology	3
Dermatovenereology	3

[a] This must include at least three years of training in internal medicine followed by training in the specific field for at least another three years.

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MALTA

For information on Malta, see Tables 1, 2 and 3 in Part II.

NETHERLANDS

General arrangements

Basic medical education takes six years, and includes 18 months of clerkships in the principal clinical subjects for all students, together with a choice of clerkships in other specialties.

After graduation, there are three choices:

(*a*) two years of training for family medicine/general practice; or

(*b*) three years of training for one of the public health specialties:

- occupational health care;
- youth health care;
- public health/community medicine (general);
- public health/community medicine with special courses, e.g. medical informatics;
- insurance medicine; or

(*c*) four to six years of training for one of the 28 clinical specialties: allergology, anaesthesiology, cardiology, cardiopulmonary surgery, dermatology, gastroenterology, surgery, internal medicine, otorhinolaryngology, paediatrics, clinical chemistry, pulmonology, microbiology, neurosurgery, neurology, clinical neurophysiology, ophthalmology, orthopaedic surgery, pathology, reconstructive surgery, psychiatry, radiodiagnostics, radiotherapy, rheumatology, rehabilitation medicine, urology, obstetrics and gynaecology.

Stages of specialization

For family medicine, training consists of at least eight months' practical training in general practice with one or two other optional courses: for example, in a nursing home, emergency ward, outpatient department and/or community health institution.

For the public health specialties, there is 1 year of theoretical training consisting of special courses, followed by a 1.5–2 year period of practical training.

There is no standard structure in the training programmes for the hospital specialties, but in all cases a considerable part of the programme consists of practical training.

Content of training

For family medicine, training is based on an inductive teaching model, which begins by looking at the problems that confront the trainees during their work in general practice. The trainees then try to determine what knowledge, skills and behaviour are required by the situation, and finally the deficiencies observed in the trainees are corrected in the most effective way possible. Trainees are assigned to selected general practitioners, and they hold regular sessions with groups of trainees.

Training in the hospital specialties varies widely, so two examples are given. Neurosurgery training lasts six years and consists of:

— one year of basic training in neurology;
— one year of basic training in surgery;
— four years of training programmes in neurosurgery itself.

The programme begins with 6–12 months of neurosurgery, continues with the training years in basic neurology and surgery, and concludes with 3–3.5 years of practical training in neurosurgery.

Specialization in paediatrics takes four years in the form of in-service training. The programme should include experience of the following subjects and departments:

— infectious diseases;
— neonatology (6 months);
— internal paediatric department (18 months);
— outpatient department (9 months);
— social paediatrics;
— diagnostic (laboratory) methods;
— preventive medicine and infant welfare centres;
— knowledge of nutrition and preparation of meals for children.

Organization, control and assessment

Hospital specialties

The training programmes of the clinical specialties are concentrated in approved hospitals or departments of hospitals; each approved training department has a leader of the training programme (normally the head of

the department) who is responsible for the educational programme and is recognized as such by the Specialist Registration Committee (SRC). There are two types of approved department:

— A-departments/hospitals, approved for the complete training programme (most A-departments are departments of university hospitals);

— B-departments/hospitals, approved for only a limited part of the training programme (i.e. in the paediatric programme a maximum of two years out of four can be spent in a B-department).

Doctors who have followed the approved training programmes are registered in a central registration system.

A national board, the Central Committee, has been set up by the Royal Dutch Medical Association (KNMG) for the approval and registration of clinical specialists. Each medical faculty appoints one member (a clinical professor) and the KNMG appoints an equal number of non-university specialists. The Central Committee determines which medical disciplines are recognized as clinical specialties and stipulates the requirements for the approved hospitals or departments. It has an advisory board, the SRC. The SRC registers the specialists and is responsible for the supervision of the approved hospitals or departments and their training programmes. Supervision is carried out by visiting committees, whose members are appointed by the SRC following nomination by the specialist societies. Each specialty has such a visiting committee and every specialty is also represented on the SRC. Local training programmes also have to be approved by the SRC. Each approved hospital or department is visited regularly to maintain control of the facilities and standards of the teaching programme.

Public health specialties

As for the hospital specialties, a central committee and Specialist Registration Committee have been set up for the public health sector.

Family medicine

Training is practical, by selected general practitioners in the geographical area covered by the department of family medicine of the medical faculty of the region. Rules and regulations for training are formulated by the College for Family Medicine (CHG), set up by the KNMG. The Government, health insurance systems, the general practitioners' association, departments of family medicine of the universities and the trainees are all involved.

Once trainees have completed their training according to the rules of the CHG, they are registered as general practitioners by the General Practitioner Registration Committee (HRC). This Committee controls trainees, trainers and training departments.

The CHG sets the criteria for the selection of general practitioner trainers and training institutions. Training arrangements are reviewed once every five years by a visiting committee (which includes local general practitioners and members of the staff of the departments of family medicine); this committee reports to the CHG and the HRC.

Additional observations

Continuing education

A system of continuing education has been set up in the Netherlands for all types of specialist (family doctors, public health specialists and clinical specialists).

A national central committee coordinates the national programme of continuing medical education. This body is set up by the eight universities that have medical faculties and the KNMG. Each medical faculty is allotted a region and each region has a regional (executive) committee, composed of faculty members and members of the profession, which is responsible for continuing medical education in that region. Continuing education courses are not yet compulsory, and there are no sanctions that compel doctors to undertake continuing education. A doctor's licence has lifelong validity. Gradually, various types of course which were previously organized by specialist societies, university departments, family doctor groups, etc., are being brought within the new continuing medical education framework.

Research

For academic/research training, there are no structured training programmes. In some specialty training programmes, particularly those in university hospitals, trainees spend some time involved in the research activities of various departments. This is a form of in-service training. Many of these trainees have completed a thesis for a doctorate. In some specialty training programmes, a period of time in a research laboratory is accepted as part of the programme. In some pre- and para-clinical disciplines such as physiology, pharmacology or immunology, structured research training programmes are available or will be organized in the near future.

NORWAY

General arrangements

Basic medical education up to the point of graduation takes six years. After graduation, there is an internship consisting of one year of training in hospital (in general surgery and internal medicine) and six months of training as assistant to a district medical officer.

After the 1.5 years of internship, the doctor has full authorization to begin work in general medicine (general practice) or begin specialist training. Specialist training takes five to eight years.

Stages of specialization

There are 41 specialties in Norway. Two specialties are for medical practitioners in primary health care: these are general medicine and community medicine. Of the other 39 specialties, 27 are main specialties. General surgery has five subspecialties, and internal medicine seven subspecialties.

There is only one level of specialization, apart from the subspecialties under general surgery and internal medicine. These subspecialties require two to three years of additional training. Some of the subspecialty training may be included within the general specialty training.

Content of training

The main training component in the hospital-based specialties is supervised work in a junior position in recognized hospital departments. This training is supervised continuously, and there is an educational programme within each department which must be followed by the trainee. Additional theoretical education is required in the form of special courses. In most specialties, these courses take 120 hours. In the surgical specialties, the trainee is required to produce evidence of having

performed a specific number of operations. In other specialties, there is a comparable requirement for the performance of specified numbers of therapeutic and diagnostic procedures.

For most specialties, the total training period comprises a specified number of years in the specialty itself — four to five years — and one year of training in related disciplines. In the surgical field, subspecialty training consists of four years of training in general surgery, three years in a surgical subspecialty and one year in a related discipline. For a subspecialty of internal medicine, training consists of three years in general internal medicine, two years in the medical subspecialty and one year in a related discipline.

A minimum of one year of training in a university hospital is required in all specialties. This year is intended to provide the more specialized aspects of clinical training, plus contact with an academic atmosphere and research.

Training for general practice/family medicine takes five years. It is carried out within a general practice, or in a general medical centre, but at least two years of the training must be under the supervision of a recognized tutor. Training for community medicine, which also takes five years, is expected to take place under the supervision of a recognized specialist in community medicine.

Organization and control

The Norwegian Medical Association initiated specialist training in Norway early in the twentieth century and responsibility for it remained with the Association until recently. When the Act concerning medical practitioners was passed in 1980, formal control and responsibility for the specialist training of doctors was assigned to the Ministry of Health, but in practice the main work of specialist training is delegated to the Norwegian Medical Association. The Association thus still has the principal responsibility for specialist training, through a board which recognizes specialties and through training committees for each individual specialty. Theoretical training by means of specially arranged courses is principally undertaken by the medical faculties of the four universities, while some other courses are the responsibility of the specialist unions under the Norwegian Medical Association.

Recognition of hospitals and hospital departments for training as well as the training requirements for specialization are determined by the Norwegian Medical Association in the form of recommendations to the Ministry of Health.

Doctors wishing to begin specialist training must apply for recognized positions as junior doctors in accredited departments.

Assessment

The backbone of specialist training is practical, supervised work in recognized hospital departments. No final examination is required for the recognition of doctors as specialists. There are, however, certain obligatory courses within the different fields of specialization which include examinations.

Specialists are recognized by the Norwegian Medical Association upon the recommendation of a specialty committee. The specialty committee bases its recommendation on the practical training and theoretical education undertaken by the doctor, and according to the training requirements set for the specialty.

Additional observations

Continuing education

Continuing education is not obligatory, except in one specialty: general medicine (general practice). In general medicine, specialty recognition is given for five years, during which time competence is reviewed and theoretical education is obligatory. The possibility of introducing compulsory continuing education for specialists has been under discussion for many years.

Occupational health

Occupational health is a restricted field of medicine in Norway, and is a full specialty only at the university research level. Lower-level training is offered to a great many doctors — mostly general practitioners — who work within occupational health.

Administration

Training in administration is available to medical practitioners. There is a proposal that training for all specialties should include courses in administration, and there are plans for an educational programme leading to certification of competence.

The future

The main plans are currently to improve the quality of specialist training by strengthening education — both practical and theoretical — in hospital departments and in university courses. A paedagogic department has recently been established within the Norwegian Medical Association to work on postgraduate and continuing education.

POLAND

General arrangements

The duration of undergraduate medical education is six years, at the end of which a certificate of graduation (diploma of physician) is awarded.

Undergraduate medical education is followed by a one-year hospital internship, which must be completed in order to receive the right to practise medicine. During internship, the young physician follows a broadly formulated programme comprising four periods of activity in different hospital departments: internal medicine (20 weeks), surgery (8 weeks), gynaecology and obstetrics (8 weeks), and paediatrics (12 weeks).

Stages of specialization

Medical specialization is divided into two levels: first-degree specialization and second-degree specialization. There are 33 first-degree specialties and 33 second-degree specialties, most of which are a continuation of the first-degree ones.

In order to become a second-degree specialist, it is first necessary to achieve first-degree specialization. For each second-degree specialty, there is a group of first-degree specialties which enable a candidate to begin further training. For example, second-degree specialization in infectious diseases may be undertaken by those who are first-degree specialists in internal medicine, paediatrics or general medicine. There are some second-degree specialties for which another second-degree specialty, in a different field, is necessary. For example, specialization in endocrinology or gastroenterology requires second-degree specialization in internal medicine (specialties of this type were formerly called subspecialties).

In 1983, about 31% of active physicians had no specialization at all, 32% were first-degree specialists and 37% second-degree specialists. The

full rights of a specialist, e.g. the title of head of a hospital department, are accorded to those with second-degree specialization.

General medicine is a specialty with both first- and second-degree specialization, although specialization is not required for normal general practice.

Content of training

The duration of first-degree specialist training is at least two years and, with some exceptions, second-degree specialization requires at least three years.

There are considerable variations among specialties in the time devoted during training to the practice of the specialty and the time devoted to related disciplines. For example, for first-degree specialization in internal medicine the training period of at least two years includes practice in hospital departments of internal medicine (18 months), infectious diseases (4 weeks), respiratory diseases (4 weeks), and one other specialty (1–2 weeks). For second-degree specialization in internal medicine, the training period of at least three years includes practice in internal medicine (18 months), radiology (2–4 weeks), neurology (2–4 weeks), and other specialties may also be included.

The training programmes in all specialties were updated in 1984. They were approved and introduced by the Ministry of Health and Social Welfare, following proposals made by the Medical Centre of Postgraduate Education in collaboration with medical academies, specialist supervisory boards, etc. They describe in a fairly uniform manner the content and other aspects of training. Each programme states the main training goals and processes: the type and duration of practice in a given specialty and in related disciplines, the extent of obligatory participation in postgraduate courses and various forms of self-education, and the examinations that are required. The programmes also indicate the expected outcome of training in terms of the knowledge and practical abilities of the specialist, and the desirable personality traits. In some cases, the programmes also comment on the professional rights ensured by the specialization.

Organization and control

The number of trainees in each specialty is regulated by the regional departments of health and by the Ministry of Health and Social Welfare. Applications from candidates are reviewed by the direct supervisor or head of the hospital department, who normally becomes the personal tutor or individual teacher of the trainee. There are no absolute criteria or

requirements for the selection of candidates for first-degree specialization; the need for specialists in various disciplines in a given area is taken into account, as are the abilities of the candidates.

Promotion during training is based on the opinion of the personal tutor, on fulfilment of curriculum requirements and on examinations. The personal tutor's role is important.

There is a countrywide register of hospital departments and other health service institutions that are entitled to provide specialist training. This register was established as a result of collaboration between the Medical Centre of Postgraduate Education, specialty supervisory boards and other bodies whose recommendations are approved by the Ministry of Health and Social Welfare.

Assessment

For first-degree specialization, examination boards are appointed by the director of the regional health department. The examiners include a representative of the local medical academy designated by its rector, and the chairman of examiners is a physician, the Chief Regional Specialist. Examinations take place twice a year in major regional hospitals, and diplomas are awarded by the director of the regional health department.

For second-degree specialization, examination boards are composed of the chairman of the national supervisory board in the specialty, two professors or associate professors of the specialty and a representative of the relevant professional or scientific society. Diplomas are awarded by the Director of the Medical Centre of Postgraduate Education with the authorization of the Ministry of Health and Social Welfare.

In several specialties, such as internal medicine, surgery, paediatrics, and obstetrics and gynaecology, nationwide examination sessions are organized every year.

Comprehensive data on active specialists are collected, stored and updated by the Ministry of Health and Social Welfare and the Medical Centre of Postgraduate Education.

Additional observations

Continuing education

Continuing education courses are arranged by the Medical Centre of Postgraduate Education, medical academies, research institutes, major hospitals and some other institutions. In terms of their availability at various levels of training and practice, continuing education courses are

not strictly separated from courses related to specialist training. Courses intended principally for specialist training are organized both centrally, by the Medical Centre of Postgraduate Education, and regionally.

The future

The whole process of medical specialization in Poland is a carefully organized and well balanced system in which all medical schools and other institutions concerned with postgraduate teaching should participate. As with every system, there are benefits and drawbacks. The aim is to enhance the possible benefits, such as adaptability to health needs, teamwork and collaboration between training centres, while at the same time diminishing the drawbacks such as rigidity, exaggerated centralization, and the negative influence on individual initiative and free development. Three problems have high priority: elaborating and improving methods of evaluating postgraduate education including specialization; establishing comprehensive lifelong programmes of education in various medical disciplines; and evaluating the effects of new regulations on medical specialization.

PORTUGAL

General arrangements

After 6 years of basic medical studies, all graduates undertake a general internship of 21 months. This includes 12 months of hospital training in medicine and surgery (including emergency units) and training in ambulatory activities related to primary health care (6 months). Graduates are placed nationwide for their internship according to the final classification obtained in their medical course and their personal preferences.

Completion of this general internship gives the physician the degree of general clinician, which is compulsory for registration as an independent medical practitioner in Portugal. Completion also allows admission to specialized internships and special cycles of study leading to three careers (in hospital medicine, family medicine/general practice and public health). Family medicine/general practice and public health have been recognized as specialties since 1980.

Stages of specialization

For hospital careers, the specialized internship is divided into three main areas:

- surgical specialties, including obstetrics and gynaecology (six years of training);
- medical specialties, including anatomical pathology (five years of training);
- the remaining specialties (anaesthesiology, dental medicine, physical medicine, nuclear medicine, ophthalmology, otorhinolaryngology, clinical pathology, child psychiatry, radiology and radiotherapy) (four years of training).

Several new specialties have been recognized since 1980: vascular surgery, facial surgery, immunotherapy, neuroradiology and child cardiology.

The specialized internships for family medicine/general practice and for public health last three years.

In addition to specialized internships, the Ministry of Health regulates programmes for special cycles of study. These cycles allow for deeper knowledge of and training in specialized areas demanding special knowledge or particular technical skills in diagnostic or therapeutic procedures (electroencephalography, medical genetics, medical hydrology, nutrition, epidemiology, school health, etc.).

Content of training

The length and content of training programmes for various specialties are broadly defined at the national level. Training includes not only the specific discipline, but also related subjects considered to be relevant. For example, the total of 6 years of specialist training in general surgery includes 9 months in surgical specialties and 9 months in medical or laboratory specialties. Specialist training in paediatrics includes, in a total of 5 years, 6 months in neonatology and 20 months in related subjects. In psychiatry, the total training period of 4 years includes 6 months in child psychiatry. Of the 3 years spent in specialist training for family medicine/general practice at least 6 months must be spent in other fields.

Organization and control

The Ministry of Health has appointed a national commission that coordinates all internship programmes in conjunction with three regional commissions in Lisbon, Oporto and Coimbra. These commissions, in turn, work with the directorates of medical internships in every health service that has training programmes. In each hospital, the interns are represented in the directorate by one member from their specialized field.

Training departments are selected on the basis of the number and type of qualified staff, the links with emergency and ambulatory units, the facilities for diagnosis and treatment, organized clinical records, an adequate number of patients, the existence of regular scientific meetings and a satisfactory library. The directorate of internship for each hospital is responsible for the training programmes provided.

The interns are distributed throughout the various professional areas according to a defined number of vacancies (at national and regional level) as well as to criteria such as score in multiple choice examinations aimed at evaluating clinical knowledge, final ranking in the medical course and any previous related experience and training.

The degree of specialist is obtained only after completion of the whole required programme. There is no intermediate level of specialization, and the opportunity for transfer between specialties is very limited.

The Portuguese Medical Order also organizes training programmes and awards titles after a final examination. The criteria it uses are based on the rules of the European Community and lead to specialized, subspecialized and competence titles in various medical areas. The length of the training in each specialty is similar to the official internships.

Assessment

The performance of each intern is evaluated during the course of training. This includes not only technical ability but also relationships with patients and colleagues, ethico-professional values, and involvement in teaching and research.

The degree of specialist is obtained after completion of the required programme. The final examination consists of a public discussion of the curriculum vitae followed by theoretical and practical assessments. Approval in the final examination gives the intern the title of consultant (*Assistente*). The title of *Assistente* allows doctors to practise independently in health services recognized by the state.

Training programmes can be revised whenever it is considered necessary, but they must be revised at least every five years. Recently, the required weekly training time was increased by 25%, thus making it impossible for interns to carry out other functions in the public service.

Additional observations

The findings of a recent study performed by the Department of Planning and Health Studies indicated that by the year 1990 there will be a surplus of 1600 people for the number of permanent hospital positions. Measures are therefore being considered to ensure that the situation does not deteriorate further. These measures will follow the recent adoption of *numerus clausus* in admissions to medical schools in Portugal.

ROMANIA

General arrangements

On completion of their undergraduate studies, all physicians, since 1978, have followed a three-year practical training programme in ambulatory and hospital services. This programme is intended to adjust the knowledge and experience acquired in the faculty of medicine more finely to the specific and diverse requirements of independent medical practice, particularly in a rural environment. This period also enables young physicians to explore their potential aptitude for a specialization beyond general practice.

After this three-year programme, physicians may work as general practitioners in ambulatory care. After two years in general practice, they may acquire the title of *Medic principal*, and after five years that of *Medic primar* (literally "first-degree physician").

These titles are grades of merit in the medical hierarchy achieved by professional competition, and similar titles exist for all other specialties. They confer a special status and responsibility on senior members of the medical profession.

Alternatively, they may begin specialized studies, such as internal medicine, general surgery, or obstetrics and gynaecology, after a process of selection organized by the Ministry of Health. This specialist training requires three years for most specialties (five years for neurosurgery). A list of specialties is given in Table 1.

Stages of specialization

Specialist training generally consists of one year of intensive instruction in a university hospital, and two years of practical training and experience in all aspects of the specialty according to a programme established by the Ministry of Health. The right to practise as a specialist is also conferred by the Ministry of Health, after candidates have passed the certifying examination, taken at the end of the period of specialist training.

It is also possible to acquire second-degree specialization in a related or narrower specialty. This arrangement is adopted for small hospitals, where a limited number of physicians must have sufficient training to meet all the needs of the service, particularly for specialized emergency care. Interested physicians may extend their competence to a second specialty by meeting certain requirements established by the Minister of Health. These include undergoing practical experience, post-university courses and examinations for a minimum of one year.

Content of training

Two out of the three years of practical training undertaken at the end of undergraduate studies are concerned with the basic medical specialties of internal medicine, surgery, obstetrics and gynaecology, and paediatrics (six months each). These two years constitute, in fact, a general internship. Bearing this in mind, the content of subsequent specialist training is entirely concerned with the specialty itself. For some specialties, however, the training programme specifies two to six months of specific training in relevant disciplines. For example, training for neurosurgery includes time spent in surgery, neurology and psychiatry; otorhinolaryngology training includes neurotraumatology and radiology; obstetrics and gynaecology training includes abdominal and endocrine surgery; general surgery training includes anaesthesiology and intensive care.

Organization and control

The planning, organization and management of specialist training are coordinated by the Ministry of Health directly or through medical institutes, university clinics and other institutions.

Selection is by competitive examination organized by the Ministry, which publicizes specialties and vacant posts. Selection depends on the choice of the candidate and his/her examination performance.

The one year of practical and theoretical instruction that takes place exclusively in university medical centres is entirely organized and directed by academic staff, appointed by the Ministry of Health in collaboration with the Ministries of Education and of Training. For a given specialty, the programme of study is identical in every teaching centre in the country. The further two years of internship are carried out in university and regional hospitals that have the necessary facilities and resources for training and are consequently accredited for this purpose by the Ministry of Health.

The Postgraduate Centre for Medical Personnel sets up and coordinates training programmes, the distribution of students and

educational methods according to norms established by the Ministry of Health.

Assessment

Assessment during training includes an examination at the end of the first year in a university clinic, and six-monthly practical examinations and continuous assessment during the two years of clinical internship. This assessment takes account of participation in seminars, case presentations, reports, and clinical and laboratory studies.

The national certifying examination at the end of specialist training consists of a written examination with questions on all aspects of the specialty and two clinical examinations (including the examination of patients) carried out by a commission of specialists under the chairmanship of a professor, associate professor or chief of service nominated by the Ministry of Health.

Additional observations

Continuing education

Medical specialization extends throughout life, and depends for its successful achievement on the continual acquisition of new information, proficiency with new techniques and adaptation of attitudes, all of which provide the purpose and the material for continuing education.

In Romania, the law provides for a national system of professional self-improvement through various programmes of training, courses, colloquia, the exchange of experience and research. These activities are organized periodically by state institutions, both academic and professional. They permit every medical specialist at least once every four to five years to benefit without cost from a period of four to six weeks of postgraduate study or training, depending on choices and professional needs. More than 200 subjects of study are offered each year covering the whole gamut of problems in medical practice.

Table 1. Specialties

Morbid anatomy and forensic medicine
Anaesthesiology and intensive care
Plastic and reparatory surgery
Communicable diseases and epidemiology
Cardiology
General surgery
Maxillofacial surgery
Child surgery and orthopaedics
Thoracic surgery
Dermatology and venereology
Diseases of nutrition and metabolism
Endocrinology
Medical assessment of work capacity and rehabilitation
Tuberculosis
Clinical haematology
Hygiene
Clinical laboratory and microbiology
Sports medicine and balneophysiotherapy
Internal medicine
Occupational medicine
Neurosurgery
Neurology
Neuropsychiatry
Obstetrics and gynaecology
Ophthalmology
Orthopaedics and traumatology
Otorhinolaryngology
Oncology - chemotherapy
Oncology - radiotherapy
Paediatrics
Psychiatry
Radiology
Rheumatology
Urology
Orthodontics

SPAIN

General arrangements

Undergraduate medical education comprises a self-contained curriculum of three years of basic sciences, followed by two years of clinical studies. In most medical schools, the clinical years are spent in institutions that are run directly by, or under the close supervision of, the medical school itself.

After graduation, there are three methods of becoming a specialist:

— research: through career paths linked to university and/or research laboratories and departments (the numbers following this pathway are very small);

— residency training: three to five years, depending on the specialty, of supervised hospital work in salaried appointments with temporary job contracts;

— professional schools: three- to four-year courses run by medical schools, during which students are charged tuition fees.

Specialist training is not obligatory. After graduation, doctors can immediately establish an independent practice, although this is very rarely done; or they may join a private institution, in which case they may initially be relatively underemployed.

Since 1980, access to all residency training programmes and almost all professional school courses is through the MIR scheme. Under this scheme, all applicants are placed on a single national roster, where they state their preferred programme of training. Ranking in the roster depends on a compounded score from the undergraduate academic record (25%) and an annual nationwide multiple choice exam (75%). The same arrangement applies to doctors wishing to change specialty or subspecialty.

Dentistry in Spain is a graduate specialty for physicians.

Stages of specialization

There are no discreet levels or degrees of specialization. Training arrangements are comb-like:[a] that is, the available pathways from the beginning of training are divided into separate specialty and subspecialty training programmes. It is not possible to switch subspecialties — e.g. cardiology to nephrology — without retaking the MIR examination.

Within a given specialty training programme, there are practical arrangements for obtaining a variety of experience at appropriate stages. For example, in training programmes for neurology or anaesthesiology, about one year is spent in internal medicine during the first year of training.

Under the MIR scheme, openings in all accredited residency training programmes and almost all professional courses are pooled. The exceptions are courses in the non-hospital-based specialties; applications for these schools and for junior research/teaching careers are on an individual basis.

A list of hospital-based specialties and partial/non-hospital-based specialties is given in Table 1.

Content of training

All trainees in clinical specialty training programmes spend some time during the first year of training in internal medicine. The remainder of the programme is committed to the specialty concerned and related disciplines. For example, trainees in medical specialties such as cardiology and respiratory medicine spend a first year in internal medicine, a second year in three- to four-month rotations through medical specialties and the final two years in their own specialty. By means of rotations and attachments, they gain experience in all the relevant facilities such as bronchography and coronary angiography which are available locally.

The content of any training programme must include theoretical studies, such as literature review, and clinical practice.

Organization and control

Specialist diplomas are government documents that carry a licence to practise, and the ultimate authority is the Ministry of Education. The managing authority is the National Council of Specialty Boards, which is responsible to the Departments of Education and Health. Presidents of

[a] For further discussion of this concept, see *Medical specialization in relation to health needs*. Copenhagen, WHO Regional Office for Europe, 1985.

individual specialty boards are members of the Council. They, and the other board members, are appointed jointly by the Ministries of Health and Education.

The selection of a training programme from among those currently available is up to the applicant, according to his/her place on the roster. The specialty boards determine the number of training places to be made available each year and in which institutions they will be. The details of all training programmes have to be approved by the appropriate specialty board, which thus acts as an accrediting body. Standards, criteria and procedures vary considerably from board to board, both in comprehensiveness and in specificity. The boards also review applications for specialist diplomas from graduates who completed their specialty training before 1980.

Assessment

Under the MIR scheme, trainees who have resident physician status are temporary members of a clinical unit with the right to participate, under supervision, in all scheduled activities such as ward rounds or teaching sessions. Some activities are specifically arranged for the benefit of residents.

There are no examinations. Instead, evaluation is through day-to-day supervision by members of the staff. Training contracts may be terminated on grounds of poor performance, although this ultimate form of discipline is rarely applied.

Trainees under the professional school scheme take examinations to complete their courses. They participate under supervision in the clinical activities of the parent unit.

Residency trainees and professional school trainees receive the same diploma automatically at the successful conclusion of the training programme. A very small number of doctors receive training at universities or in research laboratories, as junior fellows. They, and also the few doctors who train abroad, have to apply for a diploma directly to the board. Once a diploma is awarded, specialist registration is automatic for all Spanish nationals.

Residents are represented on each individual specialty board, and also in most of the governing committees of their institution or hospital.

Additional observations

Continuing education

Continuing education does not exist in a formally organized sense. In practice, there are intramural teaching activities and sharing of

experience, as well as meetings of professional societies, seminars, etc. Participation in these activities should help in achieving promotion, but in reality evaluation of their importance tends to be arbitrary. There is a growing awareness of the importance of quality control, particularly at the hospital level. Some centres have begun to set up continuing education units, and are succeeding in demonstrating their effectiveness.

Family and community medicine

In Spain, as elsewhere, the development of family practice as a specialty is recent. The exact title is Family and Community Medicine; the choice of this title was to some extent determined by a wish to distinguish the specialty from existing general practice, which was already recognized as an official medical career within the social security health care network.

Trainees spend two years in hospital departments, including internal medicine, surgery and some specialties. During this time, they are part of the hospital staff in the same way as other residents. Up to now, psychiatry has not been included in their curriculum. The last year of training is spent in special primary care teaching units under tutorial supervision. Concomitantly, there is some "community" training, mainly in statistics and epidemiology and both theoretical and practical. The extent of this varies between individual programmes. Those who have trained are still few, but regional governments appreciate their expertise and breadth of approach and have employed many of them in headquarters administration.

The blend of general practice with public health is supported by many, but regarded by others as confusing. The future of the specialty of family and community medicine is a matter for discussion for a number of reasons: the number of trainees is not very great; the traditional general practitioners feel they should be entitled to a diploma on the basis of experience; and there is a move to reduce the length of training and greatly increase the number of trainees in order to alleviate unemployment among recently graduated physicians.

The future

Any plans are likely to be affected by the new health law which is an attempt to adapt the health system to the existence of autonomous regional governments. In the mid term, postgraduate medical education will certainly be affected. In the short term, more important developments will be the arrangements to retrain specialists who have not had the benefit of residency training, and to develop continuing education and link it to economic incentives and/or career advancement.

Table 1. Specialties

Hospital-based
Allergy
Clinical analysis
Pathology
Anaesthetics
Angiology/vascular surgery
Gastroenterology
Clinical biochemistry
Cardiology
Heart surgery
General/digestive surgery
Maxillofacial surgery
Paediatric surgery
Thoracic surgery
Plastic/reparative surgery
Dermatology/venereology
Endocrinology/nutrition
Clinical pharmacology
Geriatrics
Haematology/haemotherapy
Immunology
Intensive care
Internal medicine
Nuclear medicine
Microbiology/parasitology
Nephrology
Pneumology
Neurosurgery
Clinical neurophysiology
Neurology
Gynaecology and obstetrics
Ophthalmology
Medical oncology
Radiotherapy
Otorhinolaryngology
Paediatrics and its specific areas
Psychiatry
Diagnostic radiology
Rehabilitation
Rheumatology
Traumatology and orthopaedic surgery
Urology
Partial (P)/non-hospital-based (N)
Family and community medicine (P)
Public health and preventive medicine (P)
Dentistry (N)
Hydrology (N)
Aerospace medicine (N)
Sports medicine (N)
Forensic medicine (N)
Occupational medicine (N)

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SWEDEN

General arrangements

Basic medical education takes 5.5 years (two terms of 20 weeks each per year) in the medical faculties of the six universities. The university medical degree (MD) is conferred at the end of it. For the scientific Doctorate in Medicine (DM), four years of additional study are usually required; about 20–25% of physicians obtain the DM.

After the medical degree, there is a 21-month first stage of general service for all physicians. This comprises internships in surgery and anaesthesiology (six months), internal medicine (six months), psychiatry (three months) and general medicine (six months). There are centrally organized written examinations in surgery, internal medicine and psychiatry. The pass rate is about 95%, but second and third attempts are permitted. Satisfactory completion of the general service and success in the examination lead to the granting of the Licence of Practice (LP).

Stages of specialization

After the Licence of Practice, a four- to five-year second stage of specialty training follows. This is compulsory for any physician who seeks an appointment in a county health service as a specialist physician (consultant) or chief physician (head of department). There are at present 45 specialties including occupational health, but a parliamentary inquiry has begun the task of simplifying the system.

There is only one degree of specialization. General medicine (for primary care and general practice, comparable to family medicine) is regarded as one of the specialties.

Content of training

Specialist training comprises a minimum period of time in the specialty itself (stem subject), time spent in subspecialties of the main specialty

(branch subjects) and time spent in other relevant disciplines (side training). The precise requirements are specified for each individual specialty. For example, to obtain the specialist certificate of internal medicine takes a total of 4.5 years: 3 years must be in the stem subject, internal medicine; 1 year may be in a branch subspecialty such as cardiology; and 6 months must be in psychiatry. For subspecialties of internal medicine, the usual side training required is in psychiatry; for surgery and the surgical subspecialties, the usual side training is in anaesthesiology; for psychiatry and the laboratory (diagnostic) specialties, side training is in internal medicine.

Specialist training takes place mostly in hospital, although for general medicine a substantial part of the training takes place in care centres (primary care clinics).

During the period of specialist training, the trainee must take part in six-week courses (systematic education) which are mainly within the main subject of specialization. An examination must be passed in conjunction with each course, and failure is very unusual. Some courses are of a more general nature, for example directed towards medical administration, preventive medicine, terminal care and the ethics of medical care.

During the two stages of general service and specialist training, physicians hold posts as "under-physician" (house officer/intern and registrar/resident) with the county health service. These are salaried appointments for 40 hours a week of professional service with the guidance, advice and control of a specialist physician.

Organization, control and assessment

The principles, framework, locations and budgetary provisions for basic and graduate medical education are decided by Parliament. The basic general educational plan is determined by the National Board of Universities and Colleges; the local educational plans are decided by the faculty educational boards. The plan for the graduate education of physicians is decided by Parliament or the National Board of Health and Welfare, which also grants the licences and certificates of specialist training and controls the quality of physicians' activities.

Trainees apply to the relevant county health service, and are accepted mainly on the basis of their experience in clinical service and any extra attainments such as the scientific DM.

Practically all hospitals in Sweden are owned and run by the counties. In accordance with a principle which was laid down as early as 1863 and fully developed in 1970, the county hospitals appoint trainee physicians with full-time salaries.

There is no formal review or evaluation of the function and quality of a hospital or department as a prerequisite for accreditation in the graduate educational system. District, county and regional hospitals are of different sizes — about 300, 800 and 1500 beds respectively — and have differing degrees of specialization, but all may be accredited.

Each year, the number of available internships and residencies has matched the number of physicians at the corresponding stage, so there has been no unemployment.

Additional observations

Continuing education

Continuing education in Sweden is not yet formalized. It is still mainly up to the individual, based on reading of scientific literature, visits, personal contacts, professional advice and cooperation, etc. Hospital owners accept and indirectly support local meetings and continuing education groups. National scientific societies, organized within the Swedish Society of Medicine, play an important role by arranging national meetings, and there is also a large annual Swedish medical meeting. International contacts are very important, and are thought to require greater support than has been available so far.

Public health and administration

Systematic graduate education in public health is available only at the Nordic School of Public Health in Gothenburg, where the degree of Master in Public Health may be attained. Medical administration is being developed, mainly through short, professional in-service courses for specialist physicians organized by hospital owners. A one-year course in health care administration is given, mainly for nurses, at the universities. It has been proposed that one of the universities should begin a similar course for physicians, of six months' duration.

SWITZERLAND

General arrangements

In Switzerland, postgraduate training is optional and begins immediately after the final federal examination at the end of undergraduate education. Postgraduate training leads to qualification as either an FMH specialist or an FMH practitioner in general medicine. FMH is the acronym for Foederatio Medicorum Helveticorum (Federation of Swiss Physicians), which grants FMH titles to those physicians who have followed an extended period of postgraduate training in either general practice or a clinical/nonclinical specialty. This training generally takes five years; the surgical disciplines, however, require six years.

Stages of specialization

In addition to the postgraduate qualification of FMH practitioner in general medicine, there are titles for 23 FMH specialties and 13 subspecialties. A list of specialties and subspecialties is given in Table 1. There is only one level of specialization in Switzerland.

Content of training

Postgraduate training in general practice takes five years: one year in surgery, two years in internal medicine and two years in other disciplines.

The title of specialist in a surgical discipline requires six years of training. This comprises experience in various relevant disciplines: for example, orthopaedic surgery consists of three years in orthopaedic surgery, one year in general surgery, one year in traumatology and one year in general surgery or a surgical discipline other than orthopaedics; for urology, training consists of three years in urology, one year in general surgery, and two further years in general surgery or surgical disciplines other than urology. General surgery and the surgical specialties also require three months of anaesthesiology as part of the training.

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Apart from the surgical specialties, training programmes usually require four years in the specialty and one year in a related discipline. For training in pathology, psychiatry and child and adolescent psychiatry, the year outside the specialty must be in a clinical discipline.

In addition to clinical experience, the trainee is required to participate in a programme of theoretical training, through conferences, journal clubs, etc.

Organization and control

The FMH is responsible for the organization and implementation of specialist training. Rules and regulations permit the Federation to undertake this responsibility on behalf of the 26 departments of public health in Switzerland, of the public authorities, of the medical organizations, of hospitals and of medical faculties. Training programmes are elaborated in collaboration with medical faculties and the professional specialist associations.

The selection of applicants for training is the responsibility of the director of the hospital department in which training takes place. The accreditation of training establishments falls within the competence of the Central Committee of the FMH, which decides on the basis of recommendations made by the specialist medical associations concerned. Generally, strict criteria are applied. The physicians responsible for training must themselves be of full FMH specialist status.

Assessment

The chief physician responsible for specialist training has the duty to make a written assessment of the trainee's competence and to inscribe official certificates accordingly.

The specialist associations have the right, with the approval of the FMH, to organize examinations at the end of specialist training as a condition for granting a specialist title. At present, such examinations are required in radiology, anaesthesiology, paediatric surgery and neurosurgery. No examinations are required for the other specialties.

Evidence of scientific work (a doctorate title) is a condition for obtaining the appropriate FMH title.

Additional observations

Continuing education

Continuing education is generally organized in the form of congresses of the various specialist associations. The FMH organizes seminars devoted to nonmedical themes such as management and relationships with the media. There are no arrangements at present for recertification.

Table 1. Specialties

Main specialty	Subspecialty related to main specialty
Anaesthesiology	
Child surgery	
Dermatology and venereology	Allergology and clinical immunology
General medicine	
Gynaecology and obstetrics	Gynaecological cytology (since 5 November 1986)
Internal medicine	Cardiology Endocrinology Gastroenterology Haematology Nephrology Respiratory medicine Rheumatology Allergology and clinical immunology
Child and adolescent psychiatry and psychotherapy	
Legal medicine (since 28 January 1987)	
Neurology	
Neurosurgery	
Ophthalmology	
Orthopaedic surgery	
Otorhinolaryngology, cervicofacial surgery	Phoniatrics Allergology and clinical immunology
Paediatrics	Cardiology Endocrinology Haematology Nephrology Paediatric neurology Allergology and clinical immunology
Pathology	Clinical cytopathology (since 5 November 1986)
Physical medicine and rehabilitation	Rheumatology
Plastic and reconstructive surgery	
Prevention and public health (since 7 March 1986)	
Psychiatry and psychotherapy	
Radiology	
Surgery	
Tropical medicine	
Urology	
Any specialty	Occupational health

TURKEY

For information on Turkey, see Tables 1, 2 and 3 in Part II.

UNION OF SOVIET SOCIALIST REPUBLICS

General arrangements

Physicians receive basic medical training in four types of faculty: curative medicine, paediatrics, dentistry or hygiene.

In a faculty of curative medicine, the training of general practitioners, surgeons and obstetricians/gynaecologists takes six years, five of which are devoted to general medical training while the sixth is one of specialization (subordinatura).

In a faculty of paediatrics, the training of paediatricians and paediatric surgeons also takes six years, five in general medical training and the sixth in a specialization.

In a faculty of dentistry, the training of dental physicians, dental surgeons, orthopaedic physicians and children's dental physicians takes five years, 4.5 in general medical training followed by a six-month period of specialization.

In a faculty of hygiene, the training of physicians in community health, nutritional hygiene, occupational health, and children's and adolescents' health, as well as that of physicians specializing in epidemiology, takes six years, 5.5 in general medical training followed by a six-month period of specialization.

Following the award of the diploma from a faculty of curative medicine, paediatrics or dentistry, specialization continues with a one-year internship, at the end of which the graduate starts to practise. Following the award of the diploma from a faculty of hygiene, specialization continues at the workplace for a period of one year.

Stages of specialization

Secondary specialization in narrower specialties takes place in institutes of advanced medical studies and in faculties for postgraduate medical training and specialization within medical institutes. This is in conjunction with a two-year clinical ordinatura period.

Following this, physicians undergo general further training in their chosen specialty, and receive specific advanced training in any branch of that specialty, once every five years. This training is given in institutes and faculties for advanced medical studies, and briefing courses or practical training are organized by research institutes and large health care establishments.

Organization and control

The Ministry of Health of the USSR is responsible for planning the training of specialists who will receive higher medical education.

Assessment

Students' knowledge is assessed by intermediate/local and final/state examinations.

Additional observations

For the purpose of regularly verifying the competence of physicians, certification is carried out once every five years.

UNITED KINGDOM

General arrangements

Basic undergraduate medical education takes five years, after which there is a one-year internship, followed by:

(*a*) a minimum of six to seven years' training for a hospital specialty; or

(*b*) three years' training for general practice; or

(*c*) a minimum of six years' training for community medicine (which includes medical administration, epidemiology and public health).

Stages of specialization

After the obligatory year of internship each doctor is registered and licensed to practise. There follow one or two years in hospital as a senior house officer (SHO). These years may constitute a period of general training, providing experience in several specialties before a firm career choice is made, or they may give a broad foundation for a chosen specialist career.

For general practice, the minimum training required at present is two years in relevant SHO posts, e.g. internal medicine, psychiatry or obstetrics, and one year as a trainee in a general practice.

For hospital specialties, the next stage of training takes place in one or more registrar posts held for two to four years or more. The final stage of training for the hospital specialties is higher professional training, which takes place during an appointment as senior registrar. Doctors begin specialist training in community medicine after two or more years of experience in clinical practice.

Promotion from registrar to senior registrar is difficult in many specialties owing to an imbalance in the number of trainees at different levels, so there is considerable readjustment of career ambitions at the

SHO/registrar level with movement between clinical and academic departments, and also some international movement due to the emigration of United Kingdom doctors and the presence of many foreign doctors seeking graduate training in the United Kingdom.

Content of training

The SHO/registrar period is described as general professional training, but competition for more senior posts in a number of hospital specialties is such that many doctors already begin to concentrate on a single specialty from the outset. During this period they study for one of the specialist postgraduate diplomas (MRCP, FRCS, etc.) of the Royal Colleges; they may undertake research or carry out specialized work in the unit to which they are attached. Registrar posts provide broad experience in the chosen specialty, often with rotation through different practical aspects of clinical work.

Senior registrar training programmes normally take three to four years and provide intensive training in a specialty, which may involve attachment, rotation or movement to different centres in order to acquire particular forms of expertise.

Organization and control

Once doctors have completed the obligatory year of internship, the universities have no further direct responsibility for their training. The General Medical Council has overall responsibility for all stages of medical education; in practice, the requirements for training in individual specialties are regulated by the Royal Colleges and their faculties, i.e. by the medical profession itself, through bodies that are entirely independent of the government departments of health and the universities. At SHO and registrar level there are relatively few comprehensive, organized training programmes. Most trainees apply for individual SHO or registrar posts, and seek promotion by applying again for other posts. At the senior registrar level, appointment is normally to a scheme or programme that covers the whole of the three- to four-year period.

SHO, registrar and senior registrar posts are paid appointments within the National Health Service. At SHO and registrar level, the Royal Colleges and their faculties recognize individual posts for training, and specified minimum periods of time must be spent in recognized posts in order to gain admission to the specialist diploma examinations. At senior registrar level, there are higher training committees for the main disciplines which have a number of specialist advisory committees. The latter monitor and approve training programmes in individual specialties

and subspecialties. The criteria for recognition by a Royal College or specialist advisory committee are: the variety and nature of clinical experience, the availability of well motivated trainers (consultants), adequate laboratory and other support services, office space and opportunities for research.

Within each National Health Service region, the overall postgraduate training arrangements are monitored by a postgraduate dean, appointed by the university medical school within the region.

Assessment

The diploma examinations of the Royal Colleges and faculties are mostly taken at or before the halfway stage in training — i.e. before becoming a senior registrar. Most of the examinations are in two parts, dealing respectively with the more basic scientific aspects and the more clinical or specialized aspects of the subject. In some specialties (pathology, radiology) examinations are taken near the completion of training, and one College now holds separate examinations in some specialized branches of surgery.

For senior registrar training, trainees enrol with the appropriate specialist advisory committee and, at this stage particularly, progress is monitored by supervising consultants and committees at the regional level. Most Royal Colleges and faculties grant certificates of accreditation or of completion of training when a senior registrarship has been satisfactorily concluded. This does not, however, imply automatic promotion to specialist status. To obtain a permanent career appointment with independent responsibility for the care of patients, trainees must apply successfully for a consultant appointment when they have completed their training.

Additional observations

Continuing education

Continuing education is optional, but there is a rich variety of courses, local educational programmes, meetings, conferences and distance-learning material available for both hospital practitioners and general practitioners. The main hospital in each town has a postgraduate medical centre where general practitioners, hospital specialists and trainees can meet, and where a variety of continuing education activities is provided. Much of this continuing education is organized by regional postgraduate deans, and by the Royal Colleges and faculties. There is no formal,

periodic review of competence at present for general practitioners or hospital consultants. Complaints about a doctor are dealt with variously, depending on whether they concern management, malpractice or clinical incompetence.

Research

There are opportunities for movement from hospital posts to university appointments (lecturer, demonstrator, etc.) and in the reverse direction at all levels of training. Research is not an obligatory part of consultant training, but in practice competition in some specialties is so intense that research experience is almost a necessity. Much of this research relates directly to clinical practice.

Occupational health

A large amount of occupational health work is done by general practitioners. Formal training for doctors working full time in occupational health follows the same general pattern as for the hospital-based disciplines, but its specialized element is at present concentrated mainly at the equivalent of the senior registrar level. The Faculty of Occupational Medicine of the Royal College of Physicians establishes the content and arrangements for this training, by approving suitable posts in industry and in university departments.

The future

The main plans and concerns at the moment are:

- to consolidate and extend graduate training for general practitioners;
- to relate the provision of training to career opportunities in the hospital-based specialties;
- to reduce the rigidity in training that threatens to result from increasing specialization;
- to consider methods of assessing both trainees and their training;
- to evaluate the impact of new National Health Service management arrangements on specialist training; and
- to pursue discussions on the length and quality of specialist training in relation to that of other countries, including those of the European Community.

The Education Committee of the General Medical Council has issued a number of proposals on general clinical training (internship) and draft recommendations on the training of specialists.

YUGOSLAVIA[a]

General arrangements

Undergraduate medical education in the faculties of medicine of Yugoslavia takes five years, including both practical and theoretical instruction. The first two years are spent on basic sciences, and the last three years include internal medicine, surgery, paediatrics, radiology and public health. In addition to taking an examination at the end of the final year of undergraduate study, students in Croatia must submit and defend a thesis.

Following graduation, there is a one-year compulsory clinical internship related to internal medicine, surgery, gynaecology, infectious diseases or primary health care. Graduates must complete this internship and the relevant technical examination in order to be recognized as practising doctors.

After internship, the physician may work as a general practitioner (i.e. in the field of primary health care). Doctors are normally expected to spend a minimum of two years in primary health care practice before beginning specialist training, with some exceptions.

Stages of specialization

There are basic specialties and subspecialties. The length of basic specialist training ranges from three to five years, depending on the specialty. For example, training for general medicine, physiology, neurology, physical medicine, radiology and radiotherapy takes three years; in paediatrics, general surgery, urology and orthopaedics training takes four years; and in neurosurgery, five years.

After the completion of basic specialist training, it is possible to embark on a programme of subspecialization. The duration of this additional training is 1–1.5 years, and the possibility of extending this to 1–2 years is under discussion.

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[a] Information given in this section refers mainly to the Republic of Croatia.

Content of training

There are considerable differences in the programmes of specialist training in different parts of Yugoslavia. In some specialties, training begins with organized, theoretical instruction (e.g. in general practice, industrial medicine, social medicine and health economics). In most cases, training begins with the acquisition of practical skills, and in specialties such as otorhinolaryngology, internal medicine and pharmacology theoretical courses are not yet obligatory.

Organization and control

Specialist training programmes are organized through the relevant health institutions, the general conditions being regulated by the Ministry of Health. If the institution in question does not fully satisfy these conditions, part of the training may be carried out elsewhere. The proposed programme of training must be approved by the Ministry before training begins.

As stated earlier, doctors are normally expected to carry out a minimum of two years' practical work in primary health care before they specialize. In some republics of Yugoslavia such as Serbia, however, this requirement is waived for doctors wishing to specialize in general surgery, chest surgery, blood transfusion, pathology, anatomy, biochemistry, infectious diseases, sports medicine, nuclear medicine, forensic medicine and industrial medicine, because of poor recruitment in these specialties.

Obtaining a place in a specialist training programme depends not only on the individual's personal choice and motivation, but also on the need for specialists. Permission for entry into specialist training is given by the Ministry of Health. During specialist training, doctors are not permitted to move from the institution to which they have been assigned. This has the advantage of ensuring continuity during training.

Assessment

There are examinations at the conclusion of specialist training.

Additional observations

The future

A new programme of specialization is envisaged which will include obligatory theoretical instruction over a six-month period for all specialties. As for the clinical part of the training, there are plans to vary

the length of time spent in different disciplines depending on the specialty: for example, trainees in neurosurgery and maxillofacial surgery would spend 12 months in surgery; trainees in urology would spend 10 months in surgery; trainees in orthopaedics 8 months; trainees in paediatric surgery 6 months; and trainees in gynaecology 3 months.

Part II

Tables

Note

The format of these tables follows the pattern used for previous reports and publications, and in particular *Graduate medical education in the European Region* (Copenhagen, WHO Regional Office for Europe, 1983 (EURO Reports and Studies, No. 77)).

A number of footnotes give additional information. Coverage is more comprehensive than in previous editions and 29 Member States of the Region have now supplied data.

TABLE 1

BASIC INFORMATION

Basic information	ALB	AUT	BEL	BUL	CZE	DEN	FIN	FRA	DDR	DEU	GRE	HUN	ICE	IRE	ISR
Undergraduate training															
Length of undergraduate training (in years)	5	6	7	6	6	6½	6	8-10	6	6	6	6	6	6	6
Does this include internship?	—	Yes[a]	Yes	Yes	No	No	No	Yes	Yes	Yes	No	Yes	No	No	No
Internship															
Length (in years)	1	½[a]	1	1	—	1½	1	2-5	1	1	—	1	1	1	1
Specialist training															
Does the minimum length of time required to achieve specialist status in a given specialty vary in different centres or areas of the country?	No	No	No	Yes	No	No	No	No	No	No	No	No	No	No	No
Is formal specialist training available for general practice/family practice/general medicine?	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes
Assessment															
Does assessment of specialists include:															
national examinations?	Yes	No	No	Yes	Yes	No	Yes	No	Yes	No	Yes	Yes	No	No	Yes
local/regional examinations?	No	No	No	Yes	No	No	No	Yes	Yes	Yes	No	No	No	No	No

[a] A practical training of 4 months.

Basic information	ITA	LUX[a]	MAT	NET	NOR	POL	POR	ROM	SPA	SWE	SWI	TUR	SSR	UNK	YUG
Undergraduate training															
Length of undergraduate training (in years)	6		5	6	6	6	6	3	6	5½	5-6[b]	6	6	5	5
Does this include internship?	No		No	Yes	No	No	No	No	No	No	[b]	Yes	No	No	No
Internship															
Length (in years)	½		2	1½	1½	1	2	—	—	1¾	[b]	1	1	1	1
Specialist training															
Does the minimum length of time required to achieve specialist status in a given specialty vary in different centres or areas of the country?	No		No	No	No	No	No	No	No	No	No	No	No	No	No
Is formal specialist training available for general practice/family practice/general medicine?	No		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Assessment															
Does assessment of specialists include:															
national examinations?	Yes		Yes	No	No	Yes	No	Yes	No	No	No	No	Yes	Yes	Yes
local/regional examinations?	No		No	No	No	Yes	Yes	No	No	No	No	Yes	No	No	No

[a] See pp. 66-67.

[b] There is no internship in Switzerland after final examinations; a year (the fifth or sixth) is done during the studies.

Basic information (contd)	ALB	AUT	BEL	BUL	CZE	DEN	FIN	FRA	DDR	DEU	GRE	HUN	ICE	IRE	ISR
Control															
Are the requirements for training in the various specialties periodically reviewed?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
If so, at what intervals of time (years)?	3-4	Continually	Ad hoc	½	8-10	Ad hoc	Ad hoc	Variable	About 5	Ad hoc	Ad hoc	5	10	Variable	Variable
Are training facilities (i.e. hospitals or other institutions) subject to recognition?	No	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
If so, how frequently is this recognition reviewed (years)?	—	Continually	5	3-5	—	1	Ad hoc	1	As reqd	Variable	As reqd	5	2	4	Variable
Amended list of specialties supplied?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	No	Yes
Changes in specialist training															
Have major changes occurred in specialist training since 1980?	No	No	Yes	Yes	Yes	Yes	No	Yes	No	Yes	Yes	No	Yes	No	No
If so, are details supplied?	—	—	—	Yes	Yes	Yes	—	Yes	—	No	Yes	—	No	—	—
Date when information was last revised	1986	1986	1985	1986	1985	1982	1985	1985	1985	1986	1985	1985	1987	1985	1986

Basic information (contd)	ITA	LUX[a]	MAT	NET	NOR	POL	POR	ROM	SPA	SWE	SWI	TUR	SSR	UNK	YUG
Control															
Are the requirements for training in the various specialties periodically reviewed?	No		Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes
If so, at what intervals of time (years)?	—		4-5	Ad hoc	As reqd	10	—	3-5	Ad hoc	—	(5) Ad hoc	Ad hoc	5	5	1
Are training facilities (i.e. hospitals or other institutions) subject to recognition?	No		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes
If so, how frequently is this recognition reviewed (years)?	—		5	5	3-4	—	1	3-5	1-3	By request	(2) Ad hoc	Ad hoc	—	3-5	3
Amended list of specialties supplied?	Yes		n.a.	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	No	Yes	Yes
Changes in specialist training															
Have major changes occurred in specialist training since 1980?	No		Yes	Yes	No	Yes	Yes	No	Yes	No	Yes	No	No	No	Yes
If so, are details supplied?	—		Yes	Yes	—	Yes	Yes	—	Yes	—	Yes	—	—	—	Yes
Date when information was last revised	1985		1986	1985	1985	1986	1986	1985	1986	1985	1985	1986	1985	1985	1985

[a] See pp. 66-67.

TABLE 2

TRAINING REQUIREMENTS IN INDIVIDUAL COUNTRIES

Note. Some specialties are indented under Internal medicine, Pathology and Surgery. This may suggest that they are subspecialties, but it has not always been possible to ascertain whether this is in fact the case. To gain more insight into the nature of subspecialization in a given country, reference should be made to the relevant text.

For ease of comparison, the information on specialties has been entered under standard headings. In some cases, where a specialty in a given country differs substantially from the standard one, this has been indicated in Table 3. Again, more detail will be found in the relevant country description.

Luxembourg. For information on Luxembourg, see pp. 66–67.

Additional footnotes can be found at the end of Table 2.

Main specialty	No. of years required for training in this specialty	Does this include internship?	From total given in first column		Type of examination		
			Minimum period of training required in the specialty itself (years)	Training required in other fields (years)	Oral	Written	Practical/ clinical
Anaesthetics (with reanimation and/or intensive care)	3				Yes	No	Yes
Clinical pharmacology	—						
Clinical physiology	—						
Dermatology/dermato-venereology	1				Yes	No	Yes
Epidemiology/community medicine	1				Yes	No	No
Forensic/legal medicine	1				Yes	No	No
General practice/family practice/general medicine	—						
Geriatrics/gerontology	—						
Internal medicine	2						
Cardiology	1½						
Chest medicine/tuber-culosis	1½						
Neurology/neuropsychiatry	2						
Obstetrics and gynaecology	3				Yes	No	Yes
Occupational health (industrial medicine)	—						

Oncology	1			Yes	No	Yes
Ophthalmology	2			Yes	No	Yes
Paediatrics	2					
Parasitic diseases (tropical medicine)	—					
Pathology	2					
Clinical chemistry/biochemistry	2					
Genetics (medical)	—					
Haematology	—					
Immunology	—					
Microbiology	2					
Morbid anatomy (histopathology)	—					
Psychiatry	1	No		Yes	No	Yes
Public health (hygiene)	1					
Radiodiagnosis	2			Yes	No	Yes
Radiotherapy	—					
Surgery — general	3			Yes	No	Yes
Neurosurgery	—					
Orthopaedics	3					
Otorhinolaryngology	2		2			
Thoracic/cardiac/cardiothoracic surgery	—					
Traumatology/accident surgery	3					
Urology	—					

Austria

Main specialty	No. of years required for training in this specialty	Does this include internship?	From total given in first column		Type of examination		
			Minimum period of training required in the specialty itself (years)	Training required in other fields (years)	Oral	Written	Practical/ clinical
Anaesthetics (with reanimation and/or intensive care)	6		4	2	No	No	No
Clinical pharmacology[a]	3						
Clinical physiology	—						
Dermatology/dermato-venereology	6		4	2	No	No	No
Epidemiology/community medicine	—						
Forensic/legal medicine	6		4	2	No	No	No
General practice/family practice/general medicine	3		3		No	No	No
Geriatrics/gerontology	—						
Internal medicine	6		5	1	No	No	No
Cardiology[a]	3		3		No	No	No
Chest medicine/tuber-culosis	6		4	2	No	No	No
Neurology/neuropsychiatry	6		5	1	No	No	No
Obstetrics and gynaecology	6		4	2	No	No	No
Occupational health (industrial medicine)[b]	—						

Oncology	—					
Ophthalmology	6	5	1	No	No	No
Paediatrics	6	4	2	No	No	No
Parasitic diseases (tropical medicine)	—					
Pathology	6	4	2	No	No	No
Clinical chemistry/biochemistry	6	4	2	No	No	No
Genetics (medical)	—					
Haematology	—					
Immunology	6	4	2	No	No	No
Microbiology		*See* Immunology				
Morbid anatomy (histopathology)	6	4	2	No	No	No
Psychiatry	6	4	2	No	No	No
Public health (hygiene)	6	4	2	No	No	No
Radiodiagnosis	6	5[c]	1	No	No	No
Radiotherapy		*See* Radiodiagnosis				
Surgery — general	6	4	2	No	No	No
Neurosurgery	6	4½	1½	No	No	No
Orthopaedics	6	3½	2½	No	No	No
Otorhinolaryngology	6	4	2	No	No	No
Thoracic/cardiac/cardiothoracic surgery	—					
Traumatology/accident surgery	6	3	3	No	No	No
Urology	6	4	2	No	No	No

Belgium

Main specialty	No. of years required for training in this specialty	Does this include internship?	From total given in first column		Type of examination		
			Minimum period of training required in the specialty itself (years)	Training required in other fields (years)	Oral	Written	Practical/ clinical
Anaesthetics (with reanimation and/or intensive care)	5	No	5		No	No	No
Clinical pharmacology	—						
Clinical physiology	—						
Dermatology/dermato-venereology	4	No	4		No	No	No
Epidemiology/community medicine	—						
Forensic/legal medicine	—						
General practice/family practice/general medicine	2	No	2		No	No	No
Geriatrics/gerontology	1	No	1		No	No	No
Internal medicine	5	No	2½		No	No	No
Cardiology	5	No	2	3	No	No	No
Chest medicine/tuber-culosis	5	No	2	3	No	No	No
Neurology/neuropsychiatry	5	No	4	1	No	No	No
Obstetrics and gynaecology	5	No	4	½	No	No	No
Occupational health (industrial medicine)	—						

Oncology	—						
Ophthalmology	4	No	4		No	No	No
Paediatrics	5	No	3		No	No	No
Parasitic diseases (tropical medicine)	—						
Pathology	—						
Clinical chemistry/biochemistry	—						
Genetics (medical)	—						
Haematology	—						
Immunology	—						
Microbiology	—						
Morbid anatomy (histopathology)	5	No	5		No	No	No
Psychiatry	5	No	4	1	No	No	No
Public health (hygiene)	—						
Radiodiagnosis	4	No	4		No	No	No
Radiotherapy	4	No	3¼		No	No	No
Surgery — general	6	No	4	2	No	No	No
Neurosurgery	6	No	3	2	No	No	No
Orthopaedics	6	No	3½	2	No	No	No
Otorhinolaryngology	4	No	3½		No	No	No
Thoracic/cardiac/cardiothoracic surgery	—						
Traumatology/accident surgery	—						
Urology	6	No	3	2	No	No	No

Bulgaria

Main specialty	No. of years required for training in this specialty	Does this include internship?	From total given in first column		Type of examination		
			Minimum period of training required in the specialty itself (years)	Training required in other fields (years)	Oral	Written	Practical/ clinical
Anaesthetics (with reanimation and/or intensive care)	3	No	2	¼	Yes	No	Yes
Clinical pharmacology	3	No	2		Yes	No	Yes
Clinical physiology	3	No	2		Yes	No	Yes
Dermatology/dermato-venereology	3	No	2		No	No	No
Epidemiology/community medicine	3	No	2		Yes	No	Yes
Forensic/legal medicine	3	No	2	½	Yes	No	Yes
General practice/family practice/general medicine	4	No	4		Yes	No	Yes
Geriatrics/gerontology	2	No	1		Yes	No	Yes
Internal medicine	4	No	3	5/12	Yes	No	Yes
Cardiology	2	No	1		Yes	No	Yes
Chest medicine/tuber-culosis	*See* Internal medicine						
Neurology/neuropsychiatry[a]	3/3	No/No	2/2	¼/5/12	Yes/Yes	No/No	Yes/Yes
Obstetrics and gynaecology	4	No	3	½	Yes	No	Yes
Occupational health (industrial medicine)	2	No	1		Yes	No	Yes

Oncology	—						
Ophthalmology	3	No	2	1/12	Yes	No	Yes
Paediatrics	4	No	3	5/12	Yes	No	Yes
Parasitic diseases (tropical medicine)	3	No	2	3/9	Yes	No	Yes
Pathology	3	No	2	1/4	Yes	No	Yes
Clinical chemistry/biochemistry	3	No	2		Yes	No	Yes
Genetics (medical)	—						
Haematology	2	No	1		Yes	No	Yes
Immunology	—						
Microbiology	3	No	2	1/8	Yes	No	Yes
Morbid anatomy (histopathology)	3	No	2	1/4	Yes	No	Yes
Psychiatry	3	No	2	9/12	Yes	No	Yes
Public health (hygiene)	3	No	2		Yes	No	Yes
Radiodiagnosis	3	No	2		Yes	No	Yes
Radiotherapy	3	No	2	1/4	Yes	No	Yes
Surgery — general	4	No	3	5/8	Yes	No	Yes
Neurosurgery	4	No	3	1/4	Yes	No	Yes
Orthopaedics	4	No	3	3/4	Yes	No	Yes
Otorhinolaryngology	3	No	2	1/8	Yes	No	Yes
Thoracic/cardiac/cardiothoracic surgery	—						
Traumatology/accident surgery			*See*	Orthopaedics			
Urology	4	No	2¼	1¼	Yes	No	Yes

Czechoslovakia[a]

Main specialty	No. of years required for training in this specialty	Does this include internship?	From total given in first column		Type of examination		
			Minimum period of training required in the specialty itself (years)	Training required in other fields (years)[b]	Oral	Written	Practical/ clinical
Anaesthetics (with reanimation and/or intensive care)	4		4		Yes	No	Yes
Clinical pharmacology[c]	3		3		Yes	No	Yes
Clinical physiology	—						
Dermatology/dermato-venereology	4		4		Yes	No	Yes
Epidemiology/community medicine[c]	3		3		Yes	No	Yes
Forensic/legal medicine[c]	3		3		Yes	No	Yes
General practice/family practice/general medicine	3		3		Yes	No	Yes
Geriatrics/gerontology[c]	3		3		Yes	No	Yes
Internal medicine	4		4		Yes	No	Yes
Cardiology[c]	4		4		Yes	No	Yes
Chest medicine/tuber-culosis[c]	3		3		Yes	No	Yes
Neurology/neuropsychiatry	3		3		Yes	No	Yes
Obstetrics and gynaecology	4		4		Yes	No	Yes
Occupational health (industrial medicine)[c]	3		3		Yes	No	Yes

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Oncology[c]	3	3		Yes	No	Yes
Ophthalmology	4	4		Yes	No	Yes
Paediatrics	3	3		Yes	No	Yes
Parasitic diseases (tropical medicine)[c]	3	3		Yes	No	Yes
Pathology	—					
Clinical chemistry/biochemistry	3	3	1½[d]	Yes	No	Yes
Genetics (medical)[c]	3	3		Yes	No	Yes
Haematology[c]	3	3		Yes	No	Yes
Immunology[c]	3	3		Yes	No	Yes
Microbiology	3	3		Yes	No	Yes
Morbid anatomy (histopathology)	3	3		Yes	No	Yes
Psychiatry	3	3		Yes	No	Yes
Public health (hygiene)[c]	3	3	—	Yes	No	Yes
Radiodiagnosis	4	4		Yes	No	Yes
Radiotherapy	3	3		Yes	No	Yes
Surgery — general	5	5		Yes	No	Yes
Neurosurgery[c]	5	5		Yes	No	Yes
Orthopaedics	5	5	½[e]	Yes	No	Yes
Otorhinolaryngology	4	4		Yes	No	Yes
Thoracic/cardiac/cardiothoracic surgery[c]	5	5		Yes	No	Yes
Traumatology/accident surgery[c]	5	5		Yes	No	Yes
Urology	4	4		Yes	No	Yes

Denmark

Main specialty	No. of years required for training in this specialty	Does this include internship?	From total given in first column		Type of examination		
			Minimum period of training required in the specialty itself (years)	Training required in other fields (years)	Oral	Written	Practical/ clinical
Anaesthetics (with reanimation and/or intensive care)	5	No	5	—	No	No	No
Clinical pharmacology	—						
Clinical physiology	5½	No	4½	1	No	No	No
Dermatology/dermato-venereology	5	No	4	1	No	No	No
Epidemiology/community medicine	4½	No	3	1½	No	No	No
Forensic/legal medicine	—						
General practice/family practice/general medicine	3½	No	1	2½	No	No	No
Geriatrics/gerontology	6½	No	2	4½	No	No	No
Internal medicine	5	No	4½	½	No	No	No
Cardiology	7	No	3	4	No	No	No
Chest medicine/tuber-culosis	6½	No	2½	4	No	No	No
Neurology/neuropsychiatry	5½	No	4½	1	No	No	No
Obstetrics and gynaecology	5½	No	4	1½	No	No	No
Occupational health (industrial medicine)	4½	No	3	1½	No	No	No

Oncology	—						
Ophthalmology	4½	No	4	½	No	No	No
Paediatrics	4½	No	4	½	No	No	No
Parasitic diseases (tropical medicine)	7½	No	1½	6	No	No	No
Pathology	—						
Clinical chemistry/biochemistry	5½	No	4½	1	No	No	No
Genetics (medical)	—						
Haematology	6½	No	3	3½	No	No	No
Immunology	4½	No	3½	1	No	No	No
Microbiology	5½	No	4½	1	No	No	No
Morbid anatomy (histopathology)	5½	No	4½	1	No	No	No
Psychiatry	5½	No	4½	1	No	No	No
Public health (hygiene)	*See* Epidemiology/community medicine						
Radiodiagnosis	5	No	4½	½	No	No	No
Radiotherapy	5½	No	4	1½	No	No	No
Surgery — general	5½	No	5½	—	No	No	No
Neurosurgery	7	No	3½	3½	No	No	No
Orthopaedics	5½	No	3½	2	No	No	No
Otorhinolaryngology	5	No	4	1	No	No	No
Thoracic/cardiac/cardiothoracic surgery	7	No	2½	4½	No	No	No
Traumatology/accident surgery	—						
Urology	7	No	3	4	No	No	No

Finland

Main specialty	No. of years required for training in this specialty	Does this include internship?	From total given in first column		Type of examination		
			Minimum period of training required in the specialty itself (years)	Training required in other fields (years)	Oral	Written	Practical/ clinical
Anaesthetics (with reanimation and/or intensive care)	5	Yes	4	1	No	Yes	No
Clinical pharmacology	5	Yes	4	1	No	Yes	No
Clinical physiology	5	Yes	4	1	No	Yes	No
Dermatology/dermato-venereology	5	Yes	4	1	No	Yes	No
Epidemiology/community medicine	—						
Forensic/legal medicine	5	Yes	4	1	No	Yes	No
General practice/family practice/general medicine	5	Yes	4	1	No	Yes	No
Geriatrics/gerontology	5	Yes	4	1	No	Yes	No
Internal medicine	5	Yes	4	1	No	Yes	No
Cardiology	2	Yes	2	—	No	Yes	No
Chest medicine/tuber-culosis[a]	5	Yes	4	1	No	Yes	No
Neurology/neuropsychiatry	5	Yes	4	1	No	Yes	No
Obstetrics and gynaecology	5	Yes	4	1	No	Yes	No
Occupational health (industrial medicine)	5	Yes	4	1	No	Yes	No

Oncology	5	Yes	4	1	No	Yes	No
Ophthalmology	5	Yes	4	1	No	Yes	No
Paediatrics	5	Yes	4	1	No	Yes	No
Parasitic diseases (tropical medicine)	—						
Pathology	5	Yes	4	1	No	Yes	No
Clinical chemistry/biochemistry[a]	5	Yes	4	1	No	Yes	No
Genetics (medical)[a]	5	Yes	4	1	No	Yes	No
Haematology[b]	2	Yes	2	—	No	Yes	No
Immunology[c]	2	Yes	2	—	No	Yes	No
Microbiology[a]	5	Yes	4	1	No	Yes	No
Morbid anatomy (histopathology)	—						
Psychiatry	5	Yes	4	1	No	Yes	No
Public health (hygiene)	5	Yes	4	1	No	Yes	No
Radiodiagnosis	5	Yes	4	1	No	Yes	No
Radiotherapy			*See* Oncology				
Surgery — general	5	Yes	4	1	No	Yes	No
Neurosurgery[a]	5	Yes	5		No	Yes	No
Orthopaedics	2	Yes	2	—	No	Yes	No
Otorhinolaryngology[a]	5	Yes	4	1	No	Yes	No
Thoracic/cardiac/cardiothoracic surgery	2	Yes	2	—	No	Yes	No
Traumatology/accident surgery			*See* Orthopaedics				
Urology	2	Yes	2	—	No	Yes	No

France

Main specialty	No. of years required for training in this specialty	Does this include internship?	From total given in first column		Type of examination		
			Minimum period of training required in the specialty itself (years)	Training required in other fields (years)	Oral	Written	Practical/ clinical
Anaesthetics (with reanimation and/or intensive care)	4	Yes	3	1	Yes	Yes	Yes
Clinical pharmacology	—						
Clinical physiology	—						
Dermatology/dermato-venereology	4	Yes	2	2	Yes	Yes	Yes
Epidemiology/community medicine			*See* Public health (hygiene)				
Forensic/legal medicine	2	No	2	—	Yes	Yes	Yes
General practice/family practice/general medicine	2	Yes	Variable	Variable	Yes	Yes	Yes
Geriatrics/gerontology	—						
Internal medicine	5	Yes	2	3	Yes	Yes	Yes
Cardiology	4	Yes	2½	1½	Yes	Yes	Yes
Chest medicine/tuber-culosis	4	Yes	1½	2½	Yes	Yes	Yes
Neurology/neuropsychiatry	4	Yes	2	2	Yes	Yes	Yes
Obstetrics and gynaecology	5	Yes	2	3	Yes	Yes	Yes
Occupational health (industrial medicine)	4	Yes	2	2	Yes	Yes	Yes

Oncology	2	No[a]	2	—	Yes	Yes	Yes
Ophthalmology	4	Yes	2½	1½	Yes	Yes	Yes
Paediatrics	4	Yes	2½	1½	Yes	Yes	Yes
Parasitic diseases (tropical medicine)	2	No[a]	2	—	Yes	Yes	Yes
Pathology	—						
Clinical chemistry/biochemistry	2	—	—	—	—	—	—
Genetics (medical)	2	No[a]	2	—	Yes	Yes	Yes
Haematology	2	No[a]	2	—	Yes	Yes	Yes
Immunology	2	No[a]	2	—	Yes	Yes	Yes
Microbiology	—						
Morbid anatomy (histopathology)	4	Yes	2½	1½	Yes	Yes	Yes
Psychiatry	4	Yes	3	1	Yes	Yes	Yes
Public health (hygiene)	4	Yes	2	2	Yes	Yes	Yes
Radiodiagnosis	4	Yes	2	2	Yes	Yes	Yes
Radiotherapy	4	Yes	2	2	Yes	Yes	Yes
Surgery — general	—						
Neurosurgery	5	Yes	2	3	Yes	Yes	Yes
Orthopaedics	5	Yes	2½	1½	Yes	Yes	Yes
Otorhinolaryngology	4	Yes	2	2	Yes	Yes	Yes
Thoracic/cardiac/cardiothoracic surgery	5	Yes	3	2	Yes	Yes	Yes
Traumatology/accident surgery			*See* Orthopaedics				
Urology	5	Yes	2	3	Yes	Yes	Yes

Main specialty	No. of years required for training in this specialty	Does this include internship?	From total given in first column		Type of examination		
			Minimum period of training required in the specialty itself (years)	Training required in other fields (years)	Oral	Written	Practical/ clinical
Anaesthetics (with reanimation and/or intensive care)	4-5	No	3½	½-1½	Yes	No	No
Clinical pharmacology[a]	2-3	No	2	—	No	No	No
Clinical physiology	4-5	No	4	—	Yes	No	No
Dermatology/dermato-venereology	4-5	No	4	—	Yes	No	No
Epidemiology/community medicine	4-5	No	3½	½	Yes	No	No
Forensic/legal medicine	4-5	No	3	1	Yes	No	No
General practice/family practice/general medicine	4-5	No	2½	1½	Yes	No	No
Geriatrics/gerontology	—						
Internal medicine	4-5	No	3½	½	Yes	No	No
Cardiology[a]	2-3	No	2	—	No	No	No
Chest medicine/tuber-culosis[a]	2-3	No	2	—	No	No	No
Neurology/neuropsychiatry	4-5	No	4	—	Yes	No	No
Obstetrics and gynaecology	4-5	No	4	—	Yes	No	No
Occupational health (industrial medicine)	4-5	No	3	1	Yes	No	No

Oncology	—						
Ophthalmology	4-5	No	4	—	Yes	No	No
Paediatrics	4-5	No	4	—	Yes	No	No
Parasitic diseases (tropical medicine)[a]	2-3	No	2	—	No	No	No
Pathology	4-5	No	3	1	Yes	No	No
Clinical chemistry/biochemistry[b]	4-5	No	4	—	Yes	No	No
Genetics (medical)	—						
Haematology[a]	2-3	No	2	—	No	No	No
Immunology	—						
Microbiology[b]	4-5	No	3½	½	Yes	No	No
Morbid anatomy (histopathology)[b]	4-5	No	4	—	Yes	No	No
Psychiatry	—						
Public health (hygiene)	4-5	No	3	1	Yes	No	No
Radiodiagnosis	4-5	No	4	—	Yes	No	No
Radiotherapy	—						
Surgery — general	4-5	No	4	—	Yes	No	No
Neurosurgery[b]	4-5	No	4	—	Yes	No	No
Orthopaedics[b]	4-5	No	3½	½	Yes	No	No
Otorhinolaryngology[b]	4-5	No	3¾	¼	Yes	No	No
Thoracic/cardiac/cardiothoracic surgery	—						
Traumatology/accident surgery[a]	2-3	No	2¼	¼	No	No	No
Urology	4-5	No	3	1	Yes	No	No

Federal Republic of Germany

Main specialty	No. of years required for training in this specialty	Does this include internship?	From total given in first column		Type of examination		
			Minimum period of training required in the specialty itself (years)	Training required in other fields (years)	Oral	Written	Practical/ clinical
Anaesthetics (with reanimation and/or intensive care)	4	Yes	3½	½	Yes	Yes	Yes
Clinical pharmacology[a]	2½	Yes	—	—	Yes	Yes	Yes
Clinical physiology	—						
Dermatology/dermato-venereology	4	Yes	4	—	Yes	Yes	Yes
Epidemiology/community medicine	—						
Forensic/legal medicine	5	Yes	3	2	Yes	Yes	Yes
General practice/family practice/general medicine	4	Yes	¼	3¾	Yes	Yes	Yes
Geriatrics/gerontology	—						
Internal medicine	6	Yes	4½	1½	Yes	Yes	Yes
Cardiology[b]	2	Yes	—	—	Yes	Yes	Yes
Chest medicine/tuber-culosis	4	Yes	3	1	No	No	No
Neurology/neuropsychiatry[c]	4/5	Yes/Yes	3/4	1/1	Yes/Yes	Yes/Yes	Yes/Yes
Obstetrics and gynaecology	5	Yes	4½	½	Yes	Yes	Yes
Occupational health (industrial medicine)	4	Yes	2	2	Yes	Yes	Yes

Oncology	—						
Ophthalmology	4	Yes	4	—	Yes	Yes	Yes
Paediatrics	5	Yes	4½	½	Yes	Yes	Yes
Parasitic diseases (tropical medicine)	2¼	Yes	2¼[d]	2¼[d]	Yes	Yes	Yes
Pathology	5	Yes	4	1	Yes	Yes	Yes
Clinical chemistry/biochemistry	—						
Genetics (medical)	2	Yes	2	—	Yes	Yes	Yes
Haematology[b]	2	Yes	2	—	Yes	Yes	Yes
Immunology	—						
Microbiology	5	Yes	4	1	Yes	Yes	Yes
Morbid anatomy (histopathology)	—						
Psychiatry	4	Yes	3	1	Yes	Yes	Yes
Public health (hygiene)	5	Yes			Yes	Yes	Yes
Radiodiagnosis	5	Yes	4½	½	Yes	Yes	Yes
Radiotherapy[e]	2½	Yes	2½	—	Yes	Yes	Yes
Surgery — general	6		5½	½	Yes	Yes	Yes
Neurosurgery	6		5	1	Yes	Yes	Yes
Orthopaedics	5	Yes	4	1	Yes	Yes	Yes
Otorhinolaryngology	4	Yes			Yes	Yes	Yes
Thoracic/cardiac/cardiothoracic surgery[f]	2	Yes	2	—	Yes	Yes	Yes
Traumatology/accident surgery[f]	2	Yes	2	—	Yes	Yes	Yes
Urology	5	Yes	4	1	Yes	Yes	Yes

Greece

Main specialty	No. of years required for training in this specialty	Does this include internship?	From total given in first column		Type of examination		
			Minimum period of training required in the specialty itself (years)	Training required in other fields (years)	Oral	Written	Practical/ clinical
Anaesthetics (with reanimation and/or intensive care)	4	No	3	1	Yes	No	Yes
Clinical pharmacology	—						
Clinical physiology	—						
Dermatology/dermato-venereology	4	No	2	2	Yes	No	Yes
Epidemiology/community medicine	4	No	1	3	Yes	No	Yes
Forensic/legal medicine	3	No	2	1	Yes	No	Yes
General practice/family practice/general medicine	3	No			Yes	No	Yes
Geriatrics/gerontology	—						
Internal medicine	5	No	5	—	Yes	No	Yes
Cardiology	4	No	3	1	Yes	No	Yes
Chest medicine/tuber-culosis	4	No	2½	1½	Yes	No	Yes
Neurology/neuropsychiatry	4	No	3	1	Yes	No	Yes
Obstetrics and gynaecology	5	No	3½	1½	Yes	No	Yes
Occupational health (industrial medicine)	4	No	4	—	Yes	No	Yes

Oncology	—						
Ophthalmology	4	No	4	—	Yes	No	Yes
Paediatrics	4	No	4	—	Yes	No	Yes
Parasitic diseases (tropical medicine)	—						
Pathology	—						
Clinical chemistry/biochemistry	—						
Genetics (medical)	—						
Haematology	6	No	4	2	Yes	No	Yes
Immunology	—						
Microbiology	4	No	4	—	Yes	No	Yes
Morbid anatomy (histopathology)	4	No	4	—	Yes	No	Yes
Psychiatry	4	No	3	1	Yes	No	Yes
Public health (hygiene)	1	No	1	—	Yes	Yes	Yes
Radiodiagnosis	4	No	4	—	Yes	No	Yes
Radiotherapy	4	No	4	—	Yes	No	Yes
Surgery — general	5	No	3½	1½	Yes	No	Yes
Neurosurgery	6	No	3	3	Yes	No	Yes
Orthopaedics	5	No	3	2	Yes	No	Yes
Otorhinolaryngology	5	No	3	2	Yes	No	Yes
Thoracic/cardiac/cardiothoracic surgery	7	No	3	4	Yes	No	Yes
Traumatology/accident surgery	—						
Urology	5	No	3	2	Yes	No	Yes

Hungary

Main specialty	No. of years required for training in this specialty	Does this include internship?	From total given in first column		Type of examination		
			Minimum period of training required in the specialty itself (years)	Training required in other fields (years)	Oral	Written	Practical/ clinical
Anaesthetics (with reanimation and/or intensive care)	4	Yes	3½	½	Yes	No	Yes
Clinical pharmacology[a]	2	Yes	2	—	Yes	No	Yes
Clinical physiology	—						
Dermatology/dermato-venereology	4	Yes	3	1	Yes	No	Yes
Epidemiology/community medicine	4	Yes	3¾	¼	Yes	No	Yes
Forensic/legal medicine	4	Yes	3¼	¾	Yes	No	Yes
General practice/family practice/general medicine	5	Yes	3	2	Yes	No	Yes
Geriatrics/gerontology	—						
Internal medicine	5	Yes	4¼	¾	Yes	No	Yes
Cardiology[a]	2	Yes	2	—	Yes	No	Yes
Chest medicine/tuber-culosis	4	Yes	3½	½	Yes	No	Yes
Neurology/neuropsychiatry	4	Yes	3½	½	Yes	No	Yes
Obstetrics and gynaecology	4	Yes	3¼	¾	Yes	No	Yes
Occupational health (industrial medicine)	4	Yes	3¼	¾	Yes	No	Yes

Oncology[e]	2	Yes	2	—	Yes	No	Yes
Ophthalmology	4	Yes	3¼	¾	Yes	No	Yes
Paediatrics	4	Yes	3½	½	Yes	No	Yes
Parasitic diseases (tropical medicine)[e]	2	Yes	2	—	Yes	No	Yes
Pathology	4	Yes	3½	½	Yes	No	Yes
Clinical chemistry/biochemistry	4	Yes	3½	½	Yes	No	Yes
Genetics (medical)	—						
Haematology[e]	2	Yes	2	—	Yes	No	Yes
Immunology	—						
Microbiology[e]	2	Yes	2	—	Yes	No	Yes
Morbid anatomy (histopathology)			*See* Pathology				
Psychiatry	4	Yes	3½	½	Yes	No	Yes
Public health (hygiene)	4	Yes	3½	½	Yes	No	Yes
Radiodiagnosis	4	Yes	3¼	¾	Yes	No	Yes
Radiotherapy[e]	2	Yes	2	—	Yes	No	Yes
Surgery — general	4	Yes	3	1	Yes	No	Yes
Neurosurgery[e]	3	Yes	2	1	Yes	No	Yes
Orthopaedics	4	Yes	3½	½	Yes	No	Yes
Otorhinolaryngology	4	Yes	3½	½	Yes	No	Yes
Thoracic/cardiac/cardiothoracic surgery[e]	2	Yes	2	—	Yes	No	Yes
Traumatology/accident surgery[e]	2	Yes	2	—	Yes	No	Yes
Urology	4	Yes	3½	½	Yes	No	Yes

Iceland

Main specialty[a]	No. of years required for training in this specialty	Does this include internship?	From total given in first column		Type of examination		
			Minimum period of training required in the specialty itself (years)	Training required in other fields (years)	Oral	Written	Practical/ clinical
Anaesthetics (with reanimation and/or intensive care)	4½	No	3	1½	No	No	No
Clinical pharmacology	—						
Clinical physiology	4½	No	3½	1	No	No	No
Dermatology/dermato-venereology	4½	No	3	1½	No	No	No
Epidemiology/community medicine[b]	—						
Forensic/legal medicine	—						
General practice/family practice/general medicine	4½	No	2	2½	No	No	No
Geriatrics/gerontology	5½	No	2	3½	No	No	No
Internal medicine[c]	4½	No	3½	1	No	No	No
Cardiology	5½	No	2	3½	No	No	No
Chest medicine/tuber-culosis	5½	No	2	3½	No	No	No
Neurology/neuropsychiatry[c]	4½	No	3	1½	No	No	No
Obstetrics and gynaecology	4½	No	2½	2	No	No	No
Occupational health (industrial medicine)	4½	No	2½	2	No	No	No

Oncology	5	No	3	2	No	No	No
Ophthalmology	4½	No	3	1½	No	No	No
Paediatrics[c]	4½	No	3	1½	No	No	No
Parasitic diseases (tropical medicine)	—						
Pathology[c]	4½	No	3½	1	No	No	No
Clinical chemistry/biochemistry	4½	No	3½	1	No	No	No
Genetics (medical)	—						
Haematology	4½	No	3½	1	No	No	No
Immunology	4½	No	3½	1	No	No	No
Microbiology[d]	4½	No	3½	1	No	No	No
Morbid anatomy (histopathology)	4½	No	3½	1	No	No	No
Psychiatry[c,e]	4½	No	3	1½	No	No	No
Public health (hygiene)[b]	—						
Radiodiagnosis	4½	No	3	1½	No	No	No
Radiotherapy	4½	No	3	1½	No	No	No
Surgery — general[f]	4½	No	3½	1	No	No	No
Neurosurgery	6½	No	2	4½	No	No	No
Orthopaedics[c]	5½	No	3½	2	No	No	No
Otorhinolaryngology	4½	No	3	1½	No	No	No
Thoracic/cardiac/cardiothoracic surgery	6½	No	2	4½	No	No	No
Traumatology/accident surgery	—						
Urology	6½	No	2	4½	No	No	No

Ireland

Main specialty	No. of years required for training in this specialty	Does this include internship?	From total given in first column		Type of examination		
			Minimum period of training required in the specialty itself (years)	Training required in other fields (years)	Oral	Written	Practical/ clinical
Anaesthetics (with reanimation and/or intensive care)	6	No			Yes	Yes	Yes
Clinical pharmacology	7	No			Yes	Yes	Yes
Clinical physiology	—						
Dermatology/dermato-venereology	7	No			Yes	Yes	Yes
Epidemiology/community medicine	7	No			Yes	Yes	Yes
Forensic/legal medicine	—						
General practice/family practice/general medicine	2-3	No			Yes	Yes	Yes
Geriatrics/gerontology	7	No			—	—	—
Internal medicine	7	No			Yes	Yes	Yes
Cardiology	7	No			Yes	Yes	Yes
Chest medicine/tuber-culosis	7	No		2	Yes	Yes	Yes
Neurology/neuropsychiatry	7	No			Yes	Yes	Yes
Obstetrics and gynaecology	7	No			Yes	Yes	Yes
Occupational health (industrial medicine)	6	No			Yes	Yes	Yes

Oncology	—					
Ophthalmology	7	No		Yes	Yes	Yes
Paediatrics	7	No		Yes	Yes	Yes
Parasitic diseases (tropical medicine)	—					
Pathology	6	No		Yes	Yes	Yes
Clinical chemistry/biochemistry	6	No		Yes	Yes	Yes
Genetics (medical)	—					
Haematology	6	No		Yes	Yes	Yes
Immunology	7	No		Yes	Yes	Yes
Microbiology	6	No		Yes	Yes	Yes
Morbid anatomy (histopathology)	6	No		Yes	Yes	Yes
Psychiatry	7	No		Yes	Yes	Yes
Public health (hygiene)			*See* Epidemiology/community medicine			
Radiodiagnosis	6	No		Yes	Yes	Yes
Radiotherapy	6	No		Yes	Yes	Yes
Surgery — general	7	No		Yes	Yes	Yes
Neurosurgery	8	No		Yes	Yes	Yes
Orthopaedics	7	No		Yes	Yes	Yes
Otorhinolaryngology	6	No		Yes	Yes	Yes
Thoracic/cardiac/cardiothoracic surgery	7	No		Yes	Yes	Yes
Traumatology/accident surgery	7	No		Yes	Yes	Yes
Urology	6	No		Yes	Yes	Yes

Israel

Main specialty	No. of years required for training in this specialty	Does this include internship?	From total given in first column		Type of examination		
			Minimum period of training required in the specialty itself (years)	Training required in other fields (years)	Oral	Written	Practical/ clinical
Anaesthetics (with reanimation and/or intensive care)	3½	No	3	½	Yes	Yes	Yes
Clinical pharmacology	4	No	3	1	Yes	Yes	Yes
Clinical physiology	—						
Dermatology/dermato-venereology	4½	No	3½	1	Yes	Yes	Yes
Epidemiology/community medicine	4	No	—	—	No	No	No
Forensic/legal medicine	5	No	3	2	Yes	Yes	Yes
General practice/family practice/general medicine	4	No	2	2	Yes	Yes	Yes
Geriatrics/gerontology	5						
Internal medicine	4	No	3	1	Yes	Yes	Yes
Cardiology	4½	No	2½	2	Yes	Yes	Yes
Chest medicine/tuber-culosis	4½	No	2	2½	Yes	Yes	Yes
Neurology/neuropsychiatry	4½	No	3½	1	Yes	Yes	Yes
Obstetrics and gynaecology	5½	No	4½	1	Yes	Yes	Yes
Occupational health (industrial medicine)	—						

Oncology	4½	No	4	½	Yes	Yes	Yes
Ophthalmology	4½	No	4	½	Yes	Yes	Yes
Paediatrics	4½	No	4	½	Yes	Yes	Yes
Parasitic diseases (tropical medicine)	—						
Pathology	4½	No	4	½	Yes	Yes	Yes
Clinical chemistry/biochemistry	4	No	3	1	Yes	Yes	Yes
Genetics (medical)	—						
Haematology	4½	No	2	2½	Yes	Yes	Yes
Immunology	4½	No	2	2½	Yes	Yes	Yes
Microbiology	4	No	3	1	Yes	Yes	Yes
Morbid anatomy (histopathology)	4½	No	4	½	Yes	Yes	Yes
Psychiatry	4	No	3½	½	Yes	Yes	Yes
Public health (hygiene)	4	No	—	—	Yes	Yes	Yes
Radiodiagnosis	4	No	3½	½	Yes	Yes	Yes
Radiotherapy			*See* Oncology				
Surgery — general	6	No	4½	1½	Yes	Yes	Yes
Neurosurgery	5½	No	3½	2	Yes	Yes	Yes
Orthopaedics	5½	No	3½	2	Yes	Yes	Yes
Otorhinolaryngology	4½	No	3½	1	Yes	Yes	Yes
Thoracic/cardiac/cardiothoracic surgery	5½	No	3	2½	Yes	Yes	Yes
Traumatology/accident surgery	—						
Urology	5½	No	3	2½	Yes	Yes	Yes

Main specialty	No. of years required for training in this specialty	Does this include internship?	From total given in first column		Type of examination		
			Minimum period of training required in the specialty itself (years)	Training required in other fields (years)	Oral	Written	Practical/ clinical
Anaesthetics (with reanimation and/or intensive care)	3	No	3		No	No	Yes
Clinical pharmacology	3-4		3		—	—	—
Clinical physiology	—						
Dermatology/dermato-venereology	3	No	3		Yes	No	Yes
Epidemiology/community medicine	4	No			Yes	No	Yes
Forensic/legal medicine	3	No			Yes	No	No
General practice/family practice/general medicine	—						
Geriatrics/gerontology	4				—	—	Yes
Internal medicine	5	No	3		Yes	No	Yes
Cardiology	3-4	No	3		Yes	No	Yes
Chest medicine/tuber-culosis	3-4	No	3		Yes	No	Yes
Neurology/neuropsychiatry	4	No	3		Yes	No	Yes
Obstetrics and gynaecology	4	No	3		Yes	No	Yes
Occupational health (industrial medicine)	4	No	3		Yes	No	Yes

Oncology	3	No		—	—	—
Ophthalmology	4	No	3	Yes	No	Yes
Paediatrics	4	No	3	Yes	No	Yes
Parasitic diseases (tropical medicine)	3	No	3	Yes	No	Yes
Pathology	4	No	3	Yes	No	Yes
Clinical chemistry/biochemistry	3	No	3	Yes	No	Yes
Genetics (medical)	3	No	3	Yes	No	Yes
Haematology	3	No	3	Yes	No	Yes
Immunology	3	No	3	—	—	—
Microbiology	4	No	3	Yes	No	Yes
Morbid anatomy (histopathology)	3	No	3	Yes	No	Yes
Psychiatry	4	No	3	Yes	No	Yes
Public health (hygiene)	4	No	3	Yes	No	Yes
Radiodiagnosis	4	No	3	Yes	No	Yes
Radiotherapy	4	No	3	Yes	No	Yes
Surgery — general	5	Yes	3	No	No	Yes
Neurosurgery	5	No	3	Yes	No	Yes
Orthopaedics	4	No	3	Yes	No	Yes
Otorhinolaryngology	3	No	3	Yes	No	Yes
Thoracic/cardiac/cardiothoracic surgery	5	No	3	Yes	No	Yes
Traumatology/accident surgery	5	No		Yes	No	Yes
Urology	3-5	No	3	Yes	No	Yes

Main specialty	No. of years required for training in this specialty	Does this include internship?	From total given in first column		Type of examination		
			Minimum period of training required in the specialty itself (years)	Training required in other fields (years)	Oral	Written	Practical/ clinical
Anaesthetics (with reanimation and/or intensive care)	4-5	No	4		Yes	Yes	Yes
Clinical pharmacology	–						
Clinical physiology	–						
Dermatology/dermato-venereology	–						
Epidemiology/community medicine[a]							
Forensic/legal medicine	–						
General practice/family practice/general medicine	–						
Geriatrics/gerontology	–						
Internal medicine	4-5	No	4		Yes	Yes	Yes
Cardiology[a]							
Chest medicine/tuber-culosis[a]							
Neurology/neuropsychiatry[a]							
Obstetrics and gynaecology[b]	4-5	No	4		Yes	Yes	Yes
Occupational health (industrial medicine)[a]							

Oncology[b]	5	5		Yes	Yes	Yes
Ophthalmology[b]	4-5	4		Yes	Yes	Yes
Paediatrics[b]	4-5	4		Yes	Yes	Yes
Parasitic diseases (tropical medicine)	—					
Pathology[b]	4-5	4		Yes	Yes	Yes
Clinical chemistry/biochemistry	4-5	2-3	2[c]			
Genetics (medical)	4-5	2-3	2[c]			
Haematology	4-5	2-3	2[c]			
Immunology	4-5	2-3	2[c]			
Microbiology	4-5	2-3	2[c]			
Morbid anatomy (histopathology)	—					
Psychiatry[b]	4-5	4		Yes	Yes	Yes
Public health (hygiene)[a]						
Radiodiagnosis[b]	4-5	4		Yes	Yes	Yes
Radiotherapy[b]	4-5	4		Yes	Yes	Yes
Surgery — general[b]	4-5	4		Yes	Yes	Yes
Neurosurgery	4-5	2-3	2[d]			
Orthopaedics	4-5	2-3	2[d]			
Otorhinolaryngology[b]	4-5	2-3	2[d]			
Thoracic/cardiac/cardiothoracic surgery	4-5	2-3	2[d]			
Traumatology/accident surgery	4-5	2-3	2[d]			
Urology	4-5	2-3	2[d]			

Netherlands

Main specialty	No. of years required for training in this specialty	Does this include internship?	From total given in first column		Type of examination		
			Minimum period of training required in the specialty itself (years)	Training required in other fields (years)	Oral	Written	Practical/ clinical
Anaesthetics (with reanimation and/or intensive care)	4½		3½	1	–	–	–
Clinical pharmacology	–						
Clinical physiology	–						
Dermatology/dermato-venereology	4		4	–	–	–	–
Epidemiology/community medicine	–						
Forensic/legal medicine	–						
General practice/family practice/general medicine	2				–	–	–
Geriatrics/gerontology	5		5	–	–	–	–
Internal medicine	5		5	–	–	–	–
Cardiology	5		3	2	–	–	–
Chest medicine/tuber-culosis	5		3	2	–	–	–
Neurology/neuropsychiatry	4		3	1	–	–	–
Obstetrics and gynaecology	5		5		–	–	–
Occupational health (industrial medicine)	2½		2½		–	–	–

Oncology	–					
Ophthalmology	4	4		–	–	–
Paediatrics	4			–	–	–
Parasitic diseases (tropical medicine)	–					
Pathology	4					
Clinical chemistry/biochemistry	4			–	–	–
Genetics (medical)	–					
Haematology	–					
Immunology	–					
Microbiology	4	3	1	–	–	–
Morbid anatomy (histopathology)	5			–	–	–
Psychiatry	4½	3½	1	–	–	–
Public health (hygiene)	–					
Radiodiagnosis	4	4	–	–	–	–
Radiotherapy	4	4	–	–	–	–
Surgery — general	6			–	–	–
Neurosurgery	6	4	2	–	–	–
Orthopaedics	6	4	2	–	–	–
Otorhinolaryngology	4	4	–	–	–	–
Thoracic/cardiac/cardiothoracic surgery	6	3		–	–	–
Traumatology/accident surgery	–					
Urology	6	4	2	–	–	–

Norway

Main specialty	No. of years required for training in this specialty	Does this include internship?	From total given in first column		Type of examination		
			Minimum period of training required in the specialty itself (years)	Training required in other fields (years)	Oral	Written	Practical/ clinical
Anaesthetics (with reanimation and/or intensive care)	5	No	4	1	—	—	—
Clinical pharmacology	—						
Clinical physiology	4	No			—	—	—
Dermatology/dermato-venereology	4	No	3	1	—	—	—
Epidemiology/community medicine	5	No	4	1	—	—	—
Forensic/legal medicine	—						
General practice/family practice/general medicine	5	No	4	1	—	—	—
Geriatrics/gerontology[a]	6	No	2	4	—	—	—
Internal medicine	6	No	5	1	—	—	—
Cardiology[a]	6	No	2	4	—	—	—
Chest medicine/tuber-culosis[a]	6	No	2½	3½	—	—	—
Neurology/neuropsychiatry	5	No	3½	1½	—	—	—
Obstetrics and gynaecology	5½	No	4	1½	—	—	—
Occupational health (industrial medicine)	5	No	3	2	—	—	—

Oncology	5	No	3	2	–	–	–
Ophthalmology	5½	No	4	1½	–	–	–
Paediatrics	5	No	4	1	–	–	–
Parasitic diseases (tropical medicine)[a]	6	No	3	3	–	–	–
Pathology	5	No	4	1	–	–	–
Clinical chemistry/biochemistry	5	No	3	2	–	–	–
Genetics (medical)	5	No	4	1	–	–	–
Haematology[a]	6	No	3	3	–	–	–
Immunology	5	No	4	1	–	–	–
Microbiology	5	No	4	1	–	–	–
Morbid anatomy (histopathology)	–						
Psychiatry	5	No	4	1	–	–	–
Public health (hygiene)			*See* Epidemiology/community medicine				
Radiodiagnosis	5	No	4	1	–	–	–
Radiotherapy			*See* Oncology				
Surgery — general	6	No	5	1	–	–	–
Neurosurgery	6	No	5	1	–	–	–
Orthopaedics[b]	8	No	3	5	–	–	–
Otorhinolaryngology	5	No	4	1	–	–	–
Thoracic/cardiac/cardiothoracic surgery[b]	8	No	3	5	–	–	–
Traumatology/accident surgery	–						
Urology[b]	8	No	3	5	–	–	–

Poland

Main specialty	No. of years required for training in this specialty[a]	Does this include internship?	From total given in first column		Type of examination		
			Minimum period of training required in the specialty itself (years)	Training required in other fields (years)	Oral	Written	Practical/ clinical
Anaesthetics (with reanimation and/or intensive care)	5	No	2[b]		Yes	Yes	Yes
Clinical pharmacology	5	No	5		Yes	No	Yes
Clinical physiology	—						
Dermatology/dermato-venereology	5	No	2[b]		Yes	No	Yes
Epidemiology/community medicine	5	No	2[b]		Yes	Yes	No
Forensic/legal medicine	5	No	1¾[b]		Yes	No	Yes
General practice/family practice/general medicine	5	No	2[b]		Yes	No	Yes
Geriatrics/gerontology	4	No	4		Yes	No	Yes
Internal medicine	5	No	2[b]		Yes	Yes	Yes
Cardiology	7	No	7		Yes	No	Yes
Chest medicine/tuber-culosis	4	No	2[b]		Yes	No	Yes
Neurology/neuropsychiatry	5	No	2[b]		Yes	Yes	Yes
Obstetrics and gynaecology	6	No	3[b]		Yes	Yes	Yes
Occupational health (industrial medicine)	5	No	2[b]		Yes	Yes	Yes

Oncology	4½	No	4½	Yes	No	Yes
Ophthalmology	5	No	2[b]	Yes	No	Yes
Paediatrics	5½	No	3[b]	Yes	Yes	Yes
Parasitic diseases (tropical medicine)	5	No	5	Yes	Yes	Yes
Pathology	—					
Clinical chemistry/biochemistry	—					
Genetics (medical)	—					
Haematology	7	No	7	Yes	No	Yes
Immunology	—					
Microbiology	5	No	2[b]	Yes	No	Yes
Morbid anatomy (histopathology)	3¾	No	1¾[b]	Yes	Yes	Yes
Psychiatry	5	No	2[b]	Yes	Yes	Yes
Public health (hygiene)	5	No	2[b]	Yes	No	Yes
Radiodiagnosis	6	No	3[b]	Yes	No	Yes
Radiotherapy	6	No	3[b]	Yes	No	Yes
Surgery — general	6	No	2[b]	Yes	Yes	Yes
Neurosurgery	5½	No	2[b]	Yes	No	Yes
Orthopaedics	6	No	2[b]	Yes	No	Yes
Otorhinolaryngology	5	No	2[b]	Yes	No	Yes
Thoracic/cardiac/cardiothoracic surgery	6-7	No	6	Yes	Yes	Yes
Traumatology/accident surgery			*See* Orthopaedics			
Urology	5	No	5	Yes	No	Yes

Portugal

Main specialty	No. of years required for training in this specialty	Does this include internship?	From total given in first column		Type of examination		
			Minimum period of training required in the specialty itself (years)	Training required in other fields (years)	Oral	Written	Practical/ clinical
Anaesthetics (with reanimation and/or intensive care)	4	No	4	—	Yes	Yes	Yes
Clinical pharmacology	—						
Clinical physiology	—						
Dermatology/dermato-venereology	5	No	4	1	Yes	Yes	Yes
Epidemiology/community medicine	—						
Forensic/legal medicine	—						
General practice/family practice/general medicine	3	No	2½	½	Yes	Yes	Yes
Geriatrics/gerontology	—						
Internal medicine	5	No	5	—	Yes	Yes	Yes
Cardiology	5	No	4	1	Yes	Yes	Yes
Chest medicine/tuber-culosis	5	No	4	1	Yes	Yes	Yes
Neurology/neuropsychiatry	5	No	2	3	Yes	Yes	Yes
Obstetrics and gynaecology	6	No	5	1	Yes	Yes	Yes
Occupational health (industrial medicine)	—						

Oncology	—						
Ophthalmology	4	No	4	—	Yes	Yes	Yes
Paediatrics	5	No	2⅚	2⅙	Yes	Yes	Yes
Parasitic diseases (tropical medicine)	—						
Pathology	4	No	4	—	Yes	Yes	Yes
Clinical chemistry/biochemistry	—						
Genetics (medical)	—						
Haematology	5	No	3	2	Yes	Yes	Yes
Immunology	—						
Microbiology	—						
Morbid anatomy (histopathology)	5	No	5	—	Yes	Yes	Yes
Psychiatry	4	No	3½	½	Yes	Yes	Yes
Public health (hygiene)	3	No	2	1	Yes	Yes	Yes
Radiodiagnosis	4	No	4	—	Yes	Yes	Yes
Radiotherapy	4	No	4	—	Yes	Yes	Yes
Surgery — general	6	No	4½	1½	Yes	Yes	Yes
Neurosurgery	6	No	4	2	Yes	Yes	Yes
Orthopaedics	6	No	4½	1½	Yes	Yes	Yes
Otorhinolaryngology	4	No	4	—	Yes	Yes	Yes
Thoracic/cardiac/cardiothoracic surgery	6	No	3½	2½	Yes	Yes	Yes
Traumatology/accident surgery	—						
Urology	6	No	4½	1½	Yes	Yes	Yes

Romania

Main specialty	No. of years required for training in this specialty	Does this include internship?	From total given in first column		Type of examination		
			Minimum period of training required in the specialty itself (years)	Training required in other fields (years)	Oral	Written	Practical/ clinical
Anaesthetics (with reanimation and/or intensive care)	3	No	3	—	Yes	Yes	Yes
Clinical pharmacology	—						
Clinical physiology	—						
Dermatology/dermato-venereology	3	No	3	—	Yes	Yes	Yes
Epidemiology/community medicine	3	No	1½	1½	Yes	Yes	Yes
Forensic/legal medicine	3	No	1½	1½	Yes	Yes	Yes
General practice/family practice/general medicine	3	No	3	—	Yes	Yes	Yes
Geriatrics/gerontology	—						
Internal medicine	3	No	3	—	Yes	Yes	Yes
Cardiology	3	No	2	1[a]	Yes	Yes	Yes
Chest medicine/tuber-culosis	3	No	3	—	Yes	Yes	Yes
Neurology/neuropsychiatry	3	No	3	—	Yes	Yes	Yes
Obstetrics and gynaecology	3	No	3	—	Yes	Yes	Yes
Occupational health (industrial medicine)	3	No	3	—	Yes	Yes	Yes

Oncology	3	No	2	1[a]	Yes	Yes	Yes
Ophthalmology	3	No	3	—	Yes	Yes	Yes
Paediatrics	3	No	3	—	Yes	Yes	Yes
Parasitic diseases (tropical medicine)	—						
Pathology	—						
Clinical chemistry/biochemistry	—						
Genetics (medical)	—						
Haematology	3	No	2	1[a]	Yes	Yes	Yes
Immunology	—						
Microbiology	3	No	3	—	Yes	Yes	Yes
Morbid anatomy (histopathology)			*See* Forensic/legal medicine				
Psychiatry	3	No	3	—	Yes	Yes	Yes
Public health (hygiene)	3	No	3	—	Yes	Yes	Yes
Radiodiagnosis	3	No	3	—	Yes	Yes	Yes
Radiotherapy	3	No	3	—	Yes	Yes	Yes
Surgery — general	3	No	3	—	Yes	Yes	Yes
Neurosurgery	5	No	4	1[b]	Yes	Yes	Yes
Orthopaedics	3	No	3	—	Yes	Yes	Yes
Otorhinolaryngology	3	No	3	—	Yes	Yes	Yes
Thoracic/cardiac/cardiothoracic surgery	3-4	No	3	1[b]	Yes	Yes	Yes
Traumatology/accident surgery			*See* Orthopaedics				
Urology	3	No	3	—	Yes	Yes	Yes

Spain

Main specialty	No. of years required for training in this specialty	Does this include internship?	From total given in first column		Type of examination[a]		
			Minimum period of training required in the specialty itself (years)	Training required in other fields (years)	Oral	Written	Practical/ clinical
Anaesthetics (with reanimation and/or intensive care)	4	No	3	1			
Clinical pharmacology	4	No	3	1			
Clinical physiology	4	No	4	—			
Dermatology/dermato-venereology	4	No	3	1			
Epidemiology/community medicine	—						
Forensic/legal medicine	3	No	3	—			
General practice/family practice/general medicine	3	No					
Geriatrics/gerontology	4	No	3	1			
Internal medicine	5	No	3	2			
Cardiology	5	No	3	2			
Chest medicine/tuber-culosis	4	No	3	1			
Neurology/neuropsychiatry	5	No	4	1			
Obstetrics and gynaecology	4	No	4	—			
Occupational health (industrial medicine)	3	No	3	—			

Oncology	4	No	2	2
Ophthalmology	4	No	4	—
Paediatrics	4	No	4	—
Parasitic diseases (tropical medicine)			*See*	Microbiology
Pathology	—			
Clinical chemistry/biochemistry	4	No	4	—
Genetics (medical)	—			
Haematology	4	No	3	1
Immunology	4	No	4	—
Microbiology	3	No	3	—
Morbid anatomy (histopathology)	4	No	4	—
Psychiatry	4	No	4	—
Public health (hygiene)	3	No	3	—
Radiodiagnosis	4	No	3	1
Radiotherapy	4	No	3	1
Surgery — general	5	No	4	1
Neurosurgery	5	No	3	2
Orthopaedics	5	No	3	2
Otorhinolaryngology	4	No	3	1
Thoracic/cardiac/cardiothoracic surgery	5	No	3	2
Traumatology/accident surgery			*See*	Orthopaedics
Urology	5	No	4	1

Sweden

Main specialty	No. of years required for training in this specialty	Does this include internship?	From total given in first column		Type of examination[a]		
			Minimum period of training required in the specialty itself (years)	Training required in other fields (years)	Oral	Written	Practical/ clinical
Anaesthetics (with reanimation and/or intensive care)	4	No	3	1			
Clinical pharmacology	—						
Clinical physiology	4½	No	4	½			
Dermatology/dermato-venereology	4	No	3	1			
Epidemiology/community medicine	4½	No	2	2½			
Forensic/legal medicine	4½	No	1½	3			
General practice/family practice/general medicine	4½	No	2	2½			
Geriatrics/gerontology	4½	No	2	2½			
Internal medicine	4½	No	4	½			
Cardiology	4½	No	2	2½			
Chest medicine/tuber-culosis	4½	No	2	2½			
Neurology/neuropsychiatry	4	No	3	1			
Obstetrics and gynaecology	4½	No	3	1½			
Occupational health (industrial medicine)	4½	No	2	2½			

Oncology	4½	No	3	1½
Ophthalmology	4	No	3½	½
Paediatrics	4	No	3	1
Parasitic diseases (tropical medicine)	—			
Pathology	4½	No	4	½
Clinical chemistry/biochemistry	4½	No	4	½
Genetics (medical)	—			
Haematology	—			
Immunology	4½	No	4	½
Microbiology	4½	No	4	½
Morbid anatomy (histopathology)	—			
Psychiatry	4½	No	3½	1
Public health (hygiene)	—			
Radiodiagnosis	4½	No	4	½
Radiotherapy	—			
Surgery — general	4½	No	4	½
Neurosurgery	5½	No	4	1½
Orthopaedics	4½	No	2	2½
Otorhinolaryngology	4½	No	3½	1
Thoracic/cardiac/cardiothoracic surgery	5½	No	3	2½
Traumatology/accident surgery	—			
Urology	4½	No	2	2½

Switzerland

Main specialty	No. of years required for training in this specialty	Does this include internship?	From total given in first column		Type of examination		
			Minimum period of training required in the specialty itself (years)	Training required in other fields (years)	Oral	Written	Practical/ clinical
Anaesthetics (with reanimation and/or intensive care)	5	No	4	1	—	Yes	Yes
Clinical pharmacology	—						
Clinical physiology	—						
Dermatology/dermato-venereology	5	No	4	1	No	No	No
Epidemiology/community medicine	5	No	3	2	No	No	No
Forensic/legal medicine	5	No	3	2	No	No	No
General practice/family practice/general medicine	5[a]	No			No	No	No
Geriatrics/gerontology	—						
Internal medicine	5	No	4	1	No	No	No
Cardiology	2	No	2	—	No	—[b]	—[b]
Chest medicine/tuber-culosis	2	No	2	—	No	No	No
Neurology/neuropsychiatry	5	No	3	2[c]	No	No	No
Obstetrics and gynaecology	5	No	4	1	—[b]	—[b]	—[b]
Occupational health (industrial medicine)	2				No	No	No

Oncology	2						
Ophthalmology	5	No	4	1	No	No	No
Paediatrics	5	No	4	1	No	No	No
Parasitic diseases (tropical medicine)	5	No	3	2[d]	No	No	No
Pathology	5	No	4	1	No	No	No
Clinical chemistry/biochemistry	—						
Genetics (medical)	—						
Haematology	2	No	2	—	—[b]	—[b]	—[b]
Immunology	2	No	2	—	No	No	No
Microbiology	—						
Morbid anatomy (histopathology)	5	No	4	1	No	No	No
Psychiatry	5	No	4	1	No	No	No
Public health (hygiene)			*See* Epidemiology/community medicine				
Radiodiagnosis	5	No	4	1	Yes	Yes	Yes
Radiotherapy	5	No	4	1	Yes	Yes	Yes
Surgery — general	6	No	6		No	No	No
Neurosurgery	6	No	4	2[e]	Yes	Yes	Yes
Orthopaedics	6	No	3	3[f]	No	No	No
Otorhinolaryngology	5	No	4	1	No	No	No
Thoracic/cardiac/cardiothoracic surgery	—						
Traumatology/accident surgery	—						
Urology	6	No	3	3[g]	No	No	No

Turkey

Main specialty[a]	No. of years required for training in this specialty	Does this include internship?	From total given in first column		Type of examination		
			Minimum period of training required in the specialty itself (years)	Training required in other fields (years)	Oral	Written	Practical/ clinical
Anaesthetics (with reanimation and/or intensive care)	4	No	3⅓	⅔	Yes	Yes	Yes
Clinical pharmacology	3	No	2¾	¼	Yes	Yes	Yes
Clinical physiology	2	No	2	—	Yes	Yes	Yes
Dermatology/dermato-venereology	3	No	2½	½	Yes	Yes	Yes
Epidemiology/community medicine	3	No	2	1	Yes	Yes	Yes
Forensic/legal medicine	2	No	2	—	Yes	Yes	Yes
General practice/family practice/general medicine	3	No	½	2½	Yes	Yes	Yes
Geriatrics/gerontology	—						
Internal medicine	4	No	3⅓	⅔	Yes	Yes	Yes
Cardiology[b]	2	No			Yes	Yes	Yes
Chest medicine/tuber-culosis	4	No	3	1	Yes	Yes	Yes
Neurology/neuropsychiatry	4	No	2⅔	1⅓	Yes	Yes	Yes
Obstetrics and gynaecology	4	No	3⅓	⅔	Yes	Yes	Yes
Occupational health (industrial medicine)[c]	1	No			Yes	Yes	Yes

Oncology[b]	2	No			Yes	Yes	Yes
Ophthalmology	3	No	2 5/12	7/12	Yes	Yes	Yes
Paediatrics	4	No	3 1/4	3/4	Yes	Yes	Yes
Parasitic diseases (tropical medicine)	4	No	3 1/8	5/8	Yes	Yes	Yes
Pathology	3	No			Yes	Yes	Yes
Clinical chemistry/biochemistry	3	No	2 3/4	1/4	Yes	Yes	Yes
Genetics (medical)	2	No			Yes	Yes	Yes
Haematology[b]	2	No			Yes	Yes	Yes
Immunology[b]	2	No			Yes	Yes	Yes
Microbiology	3	No	2 3/4	1/4	Yes	Yes	Yes
Morbid anatomy (histopathology)			*See* Pathology				
Psychiatry	4	No	2 2/3	1 1/3	Yes	Yes	Yes
Public health (hygiene)	3	No	2	1	Yes	Yes	Yes
Radiodiagnosis	3	No	2 1/4	3/4	Yes	Yes	Yes
Radiotherapy	3	No	2	1	Yes	Yes	Yes
Surgery — general	4	No	3 1/4	3/4	Yes	Yes	Yes
Neurosurgery	5	No	3 5/12	1 7/12	Yes	Yes	Yes
Orthopaedics	4	No	2 3/4	1 1/4	Yes	Yes	Yes
Otorhinolaryngology	3	No	2 1/8	5/8	Yes	Yes	Yes
Thoracic/cardiac/cardiothoracic surgery	5	No	3 7/12	1 5/12	Yes	Yes	Yes
Traumatology/accident surgery	—						
Urology	4	No	3 1/2	1 1/2	Yes	Yes	Yes

Union of Soviet Socialist Republics

Main specialty	No. of years required for training in this specialty	Does this include internship?	From total given in first column		Type of examination		
			Minimum period of training required in the specialty itself (years)	Training required in other fields (years)	Oral	Written	Practical/ clinical
Anaesthetics (with reanimation and/or intensive care)	7	Yes	3		Yes	No	No
Clinical pharmacology	6	No	2		Yes	No	No
Clinical physiology	—						
Dermatology/dermato-venereology	6	No	2		Yes	No	No
Epidemiology/community medicine	7	Yes	2		Yes	No	No
Forensic/legal medicine	6	No	2		Yes	No	No
General practice/family practice/general medicine	7	Yes	3		Yes	No	No
Geriatrics/gerontology	6	No	2		Yes	No	No
Internal medicine	7	Yes	3		Yes	No	No
Cardiology	7	Yes	3		Yes	No	No
Chest medicine/tuber-culosis	7	Yes	3		Yes	No	No
Neurology/neuropsychiatry	7	Yes	3		Yes	No	No
Obstetrics and gynaecology	7	Yes	3		Yes	No	No
Occupational health (industrial medicine)	7	Yes	2		Yes	No	No

Oncology	6	No	2	Yes	No	No
Ophthalmology	7	Yes	2	Yes	No	No
Paediatrics	7	Yes	3	Yes	No	No
Parasitic diseases (tropical medicine)	6	No	2	Yes	No	No
Pathology	—					
Clinical chemistry/biochemistry	—					
Genetics (medical)	6	No	2	Yes	No	No
Haematology	6	No	2	Yes	No	No
Immunology	6	No	2	Yes	No	No
Microbiology	—					
Morbid anatomy (histopathology)	7	Yes	3	Yes	No	No
Psychiatry	7	Yes	3	Yes	No	No
Public health (hygiene)	6	No	2	Yes	No	No
Radiodiagnosis	6	No	2	Yes	No	No
Radiotherapy	6	No	2	Yes	No	No
Surgery — general	7	Yes	3	Yes	No	No
Neurosurgery	7	Yes	3	Yes	No	No
Orthopaedics	6	Yes	2	Yes	No	No
Otorhinolaryngology	6	No	2	Yes	No	No
Thoracic/cardiac/cardiothoracic surgery	7	Yes	3	Yes	No	No
Traumatology/accident surgery	7	Yes	3	Yes	No	No
Urology	6	No	3	Yes	No	No

United Kingdom

Main specialty	No. of years required for training in this specialty	Does this include internship?	From total given in first column		Type of examination		
			Minimum period of training required in the specialty itself (years)	Training required in other fields (years)	Oral	Written	Practical/ clinical
Anaesthetics (with reanimation and/or intensive care)	6-7	No	5	1-2	Yes	Yes	Yes
Clinical pharmacology	7	No	3	4	Yes	Yes	Yes
Clinical physiology	7	No	3	4	Yes	Yes	Yes
Dermatology/dermato-venereology	7	No	4	3	Yes	Yes	Yes
Epidemiology/community medicine	6-7	No	5	1-2	Yes	Yes	No
Forensic/legal medicine	6	No	3	3	Yes	Yes	Yes
General practice/family practice/general medicine	3	No	1	2	No	No	No
Geriatrics/gerontology	7	No	2	5	Yes	Yes	Yes
Internal medicine	7	No	4	3	Yes	Yes	Yes
Cardiology	7	No	3	4	Yes	Yes	Yes
Chest medicine/tuber-culosis	7	No	3	4	Yes	Yes	Yes
Neurology/neuropsychiatry	7	No	4	3	Yes	Yes	Yes
Obstetrics and gynaecology	6-7	No	5	1-2	Yes	Yes	Yes
Occupational health (industrial medicine)	7	No	4	3	Yes	Yes	Yes

Oncology	7	No	4	3	Yes	Yes	Yes
Ophthalmology	6-7	No	4	2-3	Yes	Yes	Yes
Paediatrics	7	No	4	3	Yes	Yes	Yes
Parasitic diseases (tropical medicine)	7	No	4	3	Yes	Yes	Yes
Pathology	6-7	Yes	5	1-2	Yes	Yes	Yes
Clinical chemistry/biochemistry	6-7	Yes	5	1-2	Yes	Yes	Yes
Genetics (medical)	6-7	Yes	5	1-2	Yes	Yes	Yes
Haematology	6-7	No	5	1-2	Yes	Yes	Yes
Immunology	6-7	No	5	1-2	Yes	Yes	Yes
Microbiology	6-7	Yes	5	1-2	Yes	Yes	Yes
Morbid anatomy (histopathology)	6-7	Yes	5	1-2	Yes	Yes	Yes
Psychiatry	6-7	No	5	1-2	Yes	Yes	Yes
Public health (hygiene)			*See* Epidemiology/community medicine				
Radiodiagnosis	6-7	No	5	1-2	Yes	Yes	Yes
Radiotherapy	6-7	No	5	1-2	Yes	Yes	Yes
Surgery — general	6-7	No	4	2-3	Yes	Yes	Yes
Neurosurgery	8	No	5	3	Yes	Yes	Yes
Orthopaedics	6-7	No	4	2-3	Yes	Yes	Yes
Otorhinolaryngology	6	No	3	2-3	Yes	Yes	Yes
Thoracic/cardiac/cardiothoracic surgery	7	No	4	3	Yes	Yes	Yes
Traumatology/accident surgery	7	No	4	3	Yes	Yes	Yes
Urology	6	No	3	3	Yes	Yes	Yes

Yugoslavia

Main specialty	No. of years required for training in this specialty	Does this include internship?	From total given in first column		Type of examination		
			Minimum period of training required in the specialty itself (years)[a]	Training required in other fields (years)[a]	Oral	Written	Practical/ clinical
Anaesthetics (with reanimation and/or intensive care)	4	Yes			Yes	No	Yes
Clinical pharmacology	3	Yes			Yes	No	Yes
Clinical physiology[b]	3	Yes			Yes	No	Yes
Dermatology/dermato-venereology	3	Yes			Yes	No	Yes
Epidemiology/community medicine	3	Yes			Yes	No	Yes
Forensic/legal medicine	3	Yes			Yes	No	Yes
General practice/family practice/general medicine	3	Yes			Yes	No	Yes
Geriatrics/gerontology[b]	3	Yes			Yes	No	Yes
Internal medicine	4	Yes			Yes	No	Yes
Cardiology[b]	2	Yes			Yes	No	Yes
Chest medicine/tuber-culosis	4	Yes			Yes	No	Yes
Neurology/neuropsychiatry	3	Yes			Yes	No	Yes
Obstetrics and gynaecology	4	Yes			Yes	No	Yes
Occupational health (industrial medicine)	3	Yes			Yes	No	Yes

Oncology[b]	1	Yes	Yes	No	Yes
Ophthalmology	3	Yes	Yes	No	Yes
Paediatrics	4	Yes	Yes	No	Yes
Parasitic diseases (tropical diseases)[b]	1	Yes	Yes	No	Yes
Pathology	3	Yes	Yes	No	Yes
Clinical chemistry/biochemistry	3	Yes	Yes	No	Yes
Genetics (medical)[b]	1	Yes	Yes	No	Yes
Haematology[b]	1	Yes	Yes	No	Yes
Immunology[b]	1	Yes	Yes	No	Yes
Microbiology	3	Yes	Yes	No	Yes
Morbid anatomy (histopathology)	3	Yes	Yes	No	Yes
Psychiatry	3	Yes	Yes	No	Yes
Public health (hygiene)	3	Yes	Yes	No	Yes
Radiodiagnosis	3	Yes	Yes	No	Yes
Radiotherapy	3	Yes	Yes	No	Yes
Surgery — general	4	Yes	Yes	No	Yes
Neurosurgery	5	Yes	Yes	No	Yes
Orthopaedics	4	Yes	Yes	No	Yes
Otorhinolaryngology	3	Yes	Yes	No	Yes
Thoracic/cardiac/cardiothoracic surgery[b]	2	Yes	Yes	No	Yes
Traumatology/accident surgery	4				
Urology	4	Yes	Yes	No	Yes

Footnotes to Table 2

Austria

[a] Subspecialty of internal medicine.

[b] Those physicians who wish to work in occupational health attend a 12-week course.

[c] Including 6 months in radiotherapy.

Bulgaria

[a] Two separate specialties.

Czechoslovakia

[a] Some specialties are studied as first- and second-degree specializations, and some only as superspecializations. All graduates undertake first-degree specialization, which takes 2½ years, of which 1½ are spent in the specialty itself. The duration of training here refers to second-degree specialization or superspecialization as appropriate.

[b] Using a list of options, or on tutor's recommendation.

[c] Superspecialty.

[d] Internal medicine, 9 months; surgery, 3 months.

[e] Surgery, 6 months.

Finland

[a] Main specialty.

[b] Subspecialty of internal medicine.

[c] Subspecialty of microbiology.

[d] Subspecialty of surgery.

France

[a] Not completely.

German Democratic Republic

[a] Subspecialty.

[b] Main specialty.

Federal Republic of Germany

[a] Subspecialty of pharmacology.

[b] Subspecialty of internal medicine.

[c] Two separate specialties.

[d] Training in specialty and other fields combined together.

[e] Subspecialty of radiodiagnosis (radiology).

[f] Subspecialty of general surgery.

Hungary

[a] Secondary specialty, following training in a required primary specialty.

Iceland

[a] An additional specialty not listed is Physical medicine and rehabilitation, which takes 4½ years, of which 2½ are spent in the specialty itself. There are no examinations.

[b] To become a specialist in public health, a full period of training in some other specialty is required. In addition, a minimum of 1 year in public health, social medicine, and/or preventive medicine at an approved institution or university provided that the studies lead to a final examination or certificate.

[c] A specialist in this subject may be granted a specialty licence in one subspecialty; 2 years' training in the subspecialty is usually required.

[d] This includes bacteriology and virology.

[e] A specialty licence in child and teenage psychiatry (i.e. without a main specialty) may be granted provided that the following requirements are met: 1½ years in a general psychiatric department; 2 years in a special department for the subspecialty; 6 months in a general paediatric department; and 1 year in a department or institution, including research institutions related to the specialty.

[f] An additional specialty not listed is Plastic surgery, which takes 5½ years, of which 3 years are spent in the specialty itself. There are no examinations.

Malta

[a] Training arranged principally in other countries.

[b] In conjunction with the Free University of Brussels and the Catholic University of Leuven, Belgium.

[c] In general pathology.

[d] In general surgery.

Norway

[a] Subspecialty of internal medicine.

[b] Subspecialty of general surgery.

Poland

[a] For first- and second-degree specialization combined.

[b] Period of training required for first-degree specialization.

Romania

[a] In internal medicine.

[b] In general surgery.

Spain

[a] Type(s) of examination to be determined.

Sweden

[a] Examinations at the end of each of six theoretical courses during specialty training.

Switzerland

[a] Internal medicine, 2 years; surgery, 1 year; optional disciplines, 2 years.

[b] Examination(s) proposed.

Switzerland (contd)

[c] Internal medicine, 1 year; specialties related to neurology, 1 year.

[d] Internal medicine, 1 year; surgery, 6 months; optional discipline, 6 months.

[e] General surgery, 1 year; neurology, 1 year.

[f] General surgery, 2 years; traumatology, 1 year.

[g] General surgery.

Turkey

[a] Other specialties not listed include:

	No. of years required for training in this specialty	From total given in first column	
		Minimum period of training required in the specialty itself (years)	Training required in other fields (years)
Clinical anatomy	2		
Clinical histology and embryology	2		
Paediatric surgery	4	2¼	1¼
Plastic and reconstructive surgery	5	1½	3½
Physical therapy and rehabilitation	3	2¼	¼
Medical ecology	3	2	1
Aerospace medicine	2		
Underwater medicine	2		
Medical parasitology	3		
History of medicine and medical ethics	2		
Nuclear medicine	3	2½	½

[b] Subspecialty of internal medicine or of paediatrics.

[c] Subspecialty of internal medicine or of public health (hygiene).

Yugoslavia

[a] Periods of training required in the specialty itself and in other fields vary at present but will be standardized in the near future.

[b] Subspecialty.

TABLE 3

TRAINING REQUIREMENTS IN INDIVIDUAL SPECIALTIES

Note. Levels of specialization have not been indicated in Table 3, even where known, as direct comparisons may be misleading. Reference should be made to Table 2 or to the relevant country text.

Czechoslovakia. Certain specialties can be studied at first- and second-degree level. All medical graduates undertake first-degree specialization, which takes 2½ years, of which 1½ are spent in the specialty itself. Other specialties can only be studied as superspecialties, after completion of second-degree specialization. The duration of training shown here refers to second-degree specialization or superspecialization, as appropriate. The training required in other fields is chosen from a list of options or on the tutor's recommendation.

Poland. The number of years required for training in the specialty is given for first- and second-degree specialization combined. Where the figure given for the minimum period of training required in the specialty itself differs from the first figure, this refers to first-degree specialization only.

Spain. The type(s) of examination(s) are to be determined.

Sweden. Examinations take place at the end of each of six theoretical courses during specialty training.

Yugoslavia. The periods of training required in the specialty itself and in other fields vary at present but will be standardized in the near future.

Additional footnotes can be found at the end of Table 3.

Anaesthetics with reanimation and/or intensive care

Country	No. of years required for training in this specialty	Does this include internship?	From total given in first column		Type of examination		
			Minimum period of training required in the specialty itself (years)	Training required in other fields (years)	Oral	Written	Practical/ clinical
Albania	3				Yes	No	Yes
Austria	6		4	2	No	No	No
Belgium	5	No	5	—	No	No	No
Bulgaria	3	No	2¾	¼	Yes	No	Yes
Czechoslovakia	4		4	—	Yes	No	Yes
Denmark	5	No	5	—	No	No	No
Finland	5	Yes	4	1	No	Yes	No
France	4	Yes	3	1	Yes	Yes	Yes
German Democratic Republic	4-5	No	3½	½-1½	Yes	No	No
Germany, Federal Republic of	4	Yes	3½	½	Yes	Yes	Yes
Greece	4	No	3	1	Yes	No	Yes
Hungary	4	Yes	3½	½	Yes	No	Yes
Iceland	4½	No	3	1½	No	No	No

Ireland	6	No			Yes	Yes	Yes
Israel	3½	No	3	½	Yes	Yes	Yes
Italy	3	No	3	—	No	No	Yes
Luxembourg			*See* pp. 66-67				
Malta	4-5	No	4		Yes	Yes	Yes
Netherlands	4½		3½	1	—	—	—
Norway	5	No	4	1	—	—	—
Poland	5	No	2		Yes	Yes	Yes
Portugal	4	No	4	—	Yes	Yes	Yes
Romania	3	No	3	—	Yes	Yes	Yes
Spain[e]	4	No	3	1			
Sweden	4	No	3	1			
Switzerland	5	No	4	1	—	Yes	Yes
Turkey	4	No	3½	½	Yes	Yes	Yes
USSR	7	Yes	3		Yes	No	No
United Kingdom	6-7	No	5	1-2	Yes	Yes	Yes
Yugoslavia	4	Yes			Yes	No	Yes

Clinical pharmacology

Country	No. of years required for training in this specialty	Does this include internship?	From total given in first column		Type of examination		
			Minimum period of training required in the specialty itself (years)	Training required in other fields (years)	Oral	Written	Practical/ clinical
Albania	—						
Austria	3						
Belgium	—						
Bulgaria	3	No	2		Yes	No	Yes
Czechoslovakia	3		3		Yes	No	Yes
Denmark	—						
Finland	5	Yes	4	1	No	Yes	No
France	—						
German Democratic Republic	2-3	No	2	—	No	No	No
Germany, Federal Republic of	2½	Yes	—	—	Yes	Yes	Yes
Greece	—						
Hungary	2	Yes	2	—	Yes	No	Yes
Iceland	—						

Ireland	7	No			Yes	Yes	Yes
Israel	4	No	3	1	Yes	Yes	Yes
Italy	3-4		3		—	—	—
Luxembourg			*See* pp. 66-67				
Malta	—						
Netherlands	—						
Norway	—						
Poland	5	No	5		Yes	No	Yes
Portugal	—						
Romania	—						
Spain	4	No	3	1			
Sweden	—						
Switzerland	—						
Turkey	3	No	2¾	¼	Yes	Yes	Yes
USSR	6	No	2		Yes	No	No
United Kingdom	7	No	3	4	Yes	Yes	Yes
Yugoslavia	3	Yes			Yes	No	Yes

Clinical physiology

Country	No. of years required for training in this specialty	Does this include internship?	From total given in first column		Type of examination		
			Minimum period of training required in the specialty itself (years)	Training required in other fields (years)	Oral	Written	Practical/ clinical
Albania	—						
Austria	—						
Belgium	—						
Bulgaria	3	No	2		Yes	No	Yes
Czechoslovakia	—						
Denmark[e]	5½	No	4½	1	No	No	No
Finland	5	Yes	4	1	No	Yes	No
France	—						
German Democratic Republic	4-5	No	4	—	Yes	No	No
Germany, Federal Republic of	—						
Greece	—						
Hungary	—						
Iceland	4½	No	3½	1	No	No	No

Ireland	—						
Israel	—						
Italy	—						
Luxembourg			*See* pp 66-67				
Malta	—						
Netherlands	—						
Norway	4	No			—	—	—
Poland	—						
Portugal	—						
Romania	—						
Spain	4	No	4	—			
Sweden	4½	No	4	½			
Switzerland	—						
Turkey	2	No	2	—	Yes	Yes	Yes
USSR	—						
United Kingdom	7	No	3	4	Yes	Yes	Yes
Yugoslavia	3	Yes			Yes	No	Yes

Dermatology/dermatovenereology

Country	No. of years required for training in this specialty	Does this include internship?	From total given in first column		Type of examination		
			Minimum period of training required in the specialty itself (years)	Training required in other fields (years)	Oral	Written	Practical/ clinical
Albania	1				Yes	No	Yes
Austria	6		4	2	No	No	No
Belgium	4	No	4	—	No	No	No
Bulgaria	3	No	2		No	No	No
Czechoslovakia	4		4		Yes	No	Yes
Denmark	5	No	4	1	No	No	No
Finland	5	Yes	4	1	No	Yes	No
France	4	Yes	2	2	Yes	Yes	Yes
German Democratic Republic	4-5	No	4	—	Yes	No	No
Germany, Federal Republic of	4	Yes	4	—	Yes	Yes	Yes
Greece	4	No	2	2	Yes	No	Yes
Hungary	4	Yes	3	1	Yes	No	Yes
Iceland	4½	No	3	1½	No	No	No

Ireland	7	No			Yes	Yes	Yes
Israel	4½	No	3½	1	Yes	Yes	Yes
Italy	3	No	3	—	Yes	No	Yes
Luxembourg			*See* pp. 66-67				
Malta	—						
Netherlands	4		4	—	—	—	—
Norway	4	No	3	1	—	—	—
Poland	5	No	2		Yes	No	Yes
Portugal	5	No	4	1	Yes	Yes	Yes
Romania	3	No	3	—	Yes	Yes	Yes
Spain	4	No	3	1			
Sweden	4	No	3	1			
Switzerland	5	No	4	1	No	No	No
Turkey	3	No	2½	½	Yes	Yes	Yes
USSR	6	No	2		Yes	No	No
United Kingdom	7	No	4	3	Yes	Yes	Yes
Yugoslavia	3	Yes			Yes	No	Yes

Epidemiology/community medicine

Country	No. of years required for training in this specialty	Does this include internship?	From total given in first column		Type of examination		
			Minimum period of training required in the specialty itself (years)	Training required in other fields (years)	Oral	Written	Practical/ clinical
Albania	1				Yes	No	No
Austria	—						
Belgium	—						
Bulgaria[a]	3	No	2		Yes	No	Yes
Czechoslovakia[a]	3		3		Yes	No	Yes
Denmark[b]	4½	No	3	1½	No	No	No
Finland	—						
France			*See* Public health (hygiene)				
German Democratic Republic	4-5	No	3½	½	Yes	No	No
Germany, Federal Republic of	—						
Greece	4	No	1	3	Yes	No	Yes
Hungary[c]	4	Yes	3¾	¼	Yes	No	Yes
Iceland[b,d]	—						

Ireland	7	No			Yes	Yes	Yes
Israel	4	No			No	No	No
Italy	4	No			Yes	No	Yes
Luxembourg			*See* pp. 66-67				
Malta[e]							
Netherlands	—						
Norway[b]	5	No	4	1	—	—	—
Poland	5	No	2		Yes	Yes	No
Portugal	—						
Romania[f]	3	No	1½	1½	Yes	Yes	Yes
Spain	—						
Sweden	4½	No	2	2½			
Switzerland[g]	5	No	3	2	No	No	No
Turkey	3	No	2	1	Yes	Yes	Yes
USSR	7	Yes	2		Yes	No	No
United Kingdom	6-7	No	5	1-2	Yes	Yes	No
Yugoslavia	3	Yes			Yes	No	Yes

Forensic/legal medicine

Country	No. of years required for training in this specialty	Does this include internship?	From total given in first column		Type of examination		
			Minimum period of training required in the specialty itself (years)	Training required in other fields (years)	Oral	Written	Practical/ clinical
Albania	1				Yes	No	No
Austria	6		4	2	No	No	No
Belgium	—						
Bulgaria	3	No	2½	½	Yes	No	Yes
Czechoslovakia	3		3		Yes	No	Yes
Denmark	—						
Finland	5	Yes	4	1	No	Yes	No
France	2	No	2	—	Yes	Yes	Yes
German Democratic Republic	4-5	No	3	1	Yes	No	No
Germany, Federal Republic of	5	Yes	3	2	Yes	Yes	Yes
Greece	3	No	2	1	Yes	No	Yes
Hungary	4	Yes	3¼	¾	Yes	No	Yes
Iceland	—						

Ireland	—						
Israel	5	No	3	2	Yes	Yes	Yes
Italy	3	No			Yes	No	No
Luxembourg			*See* pp. 66-67				
Malta	—						
Netherlands	—						
Norway	—						
Poland	5	No	1¾		Yes	No	Yes
Portugal	—						
Romania[e]	3	No	1½	1½	Yes	Yes	Yes
Spain	3	No	3				
Sweden	4½	No	1½	3			
Switzerland	5	No	3	2	No	No	No
Turkey	2	No	2	—	Yes	Yes	Yes
USSR	6	No	2		Yes	No	No
United Kingdom	6	No	3	3	Yes	Yes	Yes
Yugoslavia	3	Yes			Yes	No	Yes

General practice/family practice/general medicine

Country	No. of years required for training in this specialty	Does this include internship?	From total given in first column		Type of examination		
			Minimum period of training required in the specialty itself (years)	Training required in other fields (years)	Oral	Written	Practical/ clinical
Albania	—						
Austria	3		3	—	No	No	No
Belgium	2	No	2	—	No	No	No
Bulgaria	4	No	4	—	Yes	No	Yes
Czechoslovakia	3		3		Yes	No	Yes
Denmark	3½	No	1	2½	No	No	No
Finland	5	Yes	4	1	No	Yes	No
France	2	Yes	Variable	Variable	Yes	Yes	Yes
German Democratic Republic	4-5	No	2½	1½	Yes	No	No
Germany, Federal Republic of	4	Yes	¼	3¾	Yes	Yes	Yes
Greece	3	No	—	—	Yes	No	Yes
Hungary	5	Yes	3	2	Yes	No	Yes
Iceland	4½	No	2	2½	No	No	No

Ireland	2-3	No			Yes	Yes	Yes
Israel	4	No	2	2	Yes	Yes	Yes
Italy	—						
Luxembourg			*See* pp. 66-67				
Malta	—						
Netherlands	2				—	—	—
Norway	5	No	4	1	—	—	—
Poland	5	No	2		Yes	No	Yes
Portugal	3	No	2½	½	Yes	Yes	Yes
Romania	3	No	3	—	Yes	Yes	Yes
Spain[a]	3	No					
Sweden	4½	No	2	2½			
Switzerland	5[b]	No			No	No	No
Turkey	3	No	½	2½	Yes	Yes	Yes
USSR	7	Yes	3		Yes	No	No
United Kingdom	3	No	1	2	No	No	No
Yugoslavia	3	Yes			Yes	No	Yes

Geriatrics/gerontology

Country	No. of years required for training in this specialty	Does this include internship?	From total given in first column		Type of examination		
			Minimum period of training required in the specialty itself (years)	Training required in other fields (years)	Oral	Written	Practical/ clinical
Albania	—						
Austria	—						
Belgium	1	No	1		No	No	No
Bulgaria	2	No	1		Yes	No	Yes
Czechoslovakia	3		3		Yes	No	Yes
Denmark[a]	6½	No	2	4½	No	No	No
Finland	5	Yes	4	1	No	Yes	No
France	—						
German Democratic Republic	—						
Germany, Federal Republic of	—						
Greece	—						
Hungary	—						
Iceland	5½	No	2	3½	No	No	No

Ireland	7	No			—	—	—
Israel	5						
Italy	4				—	—	Yes
Luxembourg			*See* pp 66-67				
Malta	—						
Netherlands	5		5	—	—	—	—
Norway	6	No	2	4	—	—	—
Poland	4	No	4	—	Yes	No	Yes
Portugal	—						
Romania	—						
Spain	4	No	3	1			
Sweden[b]	4½	No	2	2½			
Switzerland	—						
Turkey	—						
USSR	6	No	2		Yes	No	No
United Kingdom	7	No	2	5	Yes	Yes	Yes
Yugoslavia	3	Yes			Yes	No	Yes

Internal medicine

Country	No. of years required for training in this specialty	Does this include internship?	From total given in first column		Type of examination		
			Minimum period of training required in the specialty itself (years)	Training required in other fields (years)	Oral	Written	Practical/ clinical
Albania	2						
Austria	6		5	1	No	No	No
Belgium	5	No	2¼	—	No	No	No
Bulgaria	4	No	3	5/12	Yes	No	Yes
Czechoslovakia	4		4		Yes	No	Yes
Denmark	5	No	4½	½	No	No	No
Finland	5	Yes	4	1	No	Yes	No
France	5	Yes	2	3	Yes	Yes	Yes
German Democratic Republic	4-5	No	3½	½	Yes	No	No
Germany, Federal Republic of	6	Yes	4½	1½	Yes	Yes	Yes
Greece	5	No	5	—	Yes	No	Yes
Hungary	5	Yes	4¼	¾	Yes	No	Yes
Iceland	4½	No	3½	1	No	No	No

Ireland	7	No			Yes	Yes	Yes
Israel	4	No	3	1	Yes	Yes	Yes
Italy	5	No	3		Yes	No	Yes
Luxembourg			*See* pp. 66-67				
Malta	4-5	No	4		Yes	Yes	Yes
Netherlands	5		5	—	—	—	—
Norway	6	No	5	1	—	—	—
Poland	5	No	2		Yes	Yes	Yes
Portugal	5	No	5	—	Yes	Yes	Yes
Romania	3	No	3	—	Yes	Yes	Yes
Spain	5	No	3	2			
Sweden	4½	No	4	½			
Switzerland	5	No	4	1	No	No	No
Turkey	4	No	3½	1½	Yes	Yes	Yes
USSR	7	Yes	3		Yes	No	No
United Kingdom	7	No	4	3	Yes	Yes	Yes
Yugoslavia	4	Yes			Yes	No	Yes

Cardiology

Country	No. of years required for training in this specialty	Does this include internship?	From total given in first column		Type of examination		
			Minimum period of training required in the specialty itself (years)	Training required in other fields (years)	Oral	Written	Practical/ clinical
Albania	1½						
Austria	3		3	—	No	No	No
Belgium	5	No	2	3	No	No	No
Bulgaria	2	No	1		Yes	No	Yes
Czechoslovakia	4		4		Yes	No	Yes
Denmark	7	No	3	4	No	No	No
Finland	2	Yes	2	—	No	Yes	No
France	4	Yes	2½	1½	Yes	Yes	Yes
German Democratic Republic	2-3	No	2	—	No	No	No
Germany, Federal Republic of	2	Yes	—	—	Yes	Yes	Yes
Greece	4	No	3	1	Yes	No	Yes
Hungary	2	Yes	2		Yes	No	Yes
Iceland	5½	No	2	3½	No	No	No

Ireland	7	No			Yes	Yes	Yes
Israel	4½	No	2½	2	Yes	Yes	Yes
Italy	3-4	No	3		Yes	No	Yes
Luxembourg			*See* pp. 66-67				
Malta[a]							
Netherlands	5		3	2	—	—	—
Norway	6	No	2	4	—	—	—
Poland	7	No	7	—	Yes	No	Yes
Portugal	5	No	4	1	Yes	Yes	Yes
Romania	3	No	2	1	Yes	Yes	Yes
Spain	5	No	3	2			
Sweden	4½	No	2	2½			
Switzerland	2	No	2	—	No	—[b]	—[b]
Turkey	2	No			Yes	Yes	Yes
USSR	7	Yes	3		Yes	No	No
United Kingdom	7	No	3	4	Yes	Yes	Yes
Yugoslavia	3	Yes			Yes	No	Yes

Chest medicine/tuberculosis

Country	No. of years required for training in this specialty	Does this include internship?	From total given in first column		Type of examination		
			Minimum period of training required in the specialty itself (years)	Training required in other fields (years)	Oral	Written	Practical/ clinical
Albania	1½						
Austria	6		4	2	No	No	No
Belgium	5	No	2	3	No	No	No
Bulgaria			*See* Internal medicine				
Czechoslovakia	3		3		Yes	No	Yes
Denmark	6½	No	2½	4	No	No	No
Finland	5	Yes	4	1	No	Yes	No
France	4	Yes	1½	2½	Yes	Yes	Yes
German Democratic Republic	2-3	No	2	—	No	No	No
Germany, Federal Republic of	4	Yes	3	1	No	No	No
Greece	4	No	2½	1½	Yes	No	Yes
Hungary	4	Yes	3½	½	Yes	No	Yes
Iceland	5½	No	2	3½	No	No	No

Ireland	7	No		2	Yes	Yes	Yes
Israel	4½	No	2	2½	Yes	Yes	Yes
Italy	3-4	No	3		Yes	No	Yes
Luxembourg			*See* pp. 66-67				
Malta[e]							
Netherlands	5		3	2	—	—	—
Norway	6	No	2½	3½	—	—	—
Poland	4	No	2		Yes	No	Yes
Portugal	5	No	4	1	Yes	Yes	Yes
Romania	3	No	3	—	Yes	Yes	Yes
Spain	4	No	3	1			
Sweden	4½	No	2	2½			
Switzerland	2	No	2	—	No	No	No
Turkey	4	No	3	1	Yes	Yes	Yes
USSR	7	Yes	3		Yes	No	No
United Kingdom	7	No	3	4	Yes	Yes	Yes
Yugoslavia	4	Yes			Yes	No	Yes

Neurology/neuropsychiatry

Country	No. of years required for training in this specialty	Does this include internship?	From total given in first column		Type of examination		
			Minimum period of training required in the specialty itself (years)	Training required in other fields (years)	Oral	Written	Practical/ clinical
Albania	2						
Austria	6		5	1	No	No	No
Belgium[a]	5	No	4	1	No	No	No
Bulgaria[b]	3	No	2	[c]	Yes	No	Yes
Czechoslovakia[a]	3		3		Yes	No	Yes
Denmark[a]	5½	No	4½	1	No	No	No
Finland[a]	5	Yes	4	1	No	Yes	No
France[a]	4	Yes	2	2	Yes	Yes	Yes
German Democratic Republic	4–5	No	4	—	Yes	No	No
Germany, Federal Republic of[b]	4/5	Yes	3/4	1	Yes	Yes	Yes
Greece[a]	4	No	3	1	Yes	No	Yes
Hungary[a]	4	Yes	3½	½	Yes	No	Yes
Iceland[a]	4½	No	3	1½	No	No	No

Ireland[a]	7	No			Yes	Yes	Yes
Israel	4½	No	3½	1	Yes	Yes	Yes
Italy	4	No	3		Yes	No	Yes
Luxembourg			*See* pp. 66-67				
Malta[d]							
Netherlands[e]	4		3	1	—	—	—
Norway[e]	5	No	3½	1½	—	—	—
Poland	5	No	2		Yes	Yes	Yes
Portugal	5	No	2	3	Yes	Yes	Yes
Romania[b]	3	No	3	—	Yes	Yes	Yes
Spain[e]	5	No	4	1			
Sweden	4	No	3	1			
Switzerland[e]	5	No	3	2	No	No	No
Turkey	4	No	2⅔	1⅓	Yes	Yes	Yes
USSR	7	Yes	3		Yes	No	No
United Kingdom[e]	7	No	4	3	Yes	Yes	Yes
Yugoslavia	3	Yes			Yes	No	Yes

Obstetrics and gynaecology

Country	No. of years required for training in this specialty	Does this include internship?	From total given in first column		Type of examination		
			Minimum period of training required in the specialty itself (years)	Training required in other fields (years)	Oral	Written	Practical/ clinical
Albania	3				Yes	No	Yes
Austria	6		4	2	No	No	No
Belgium	5	No	4	½	No	No	No
Bulgaria	4	No	3	½	Yes	No	Yes
Czechoslovakia	4		4		Yes	No	Yes
Denmark	5½	No	4	1½	No	No	No
Finland	5	Yes	4	1	No	Yes	No
France	5	Yes	2	3	Yes	Yes	Yes
German Democratic Republic	4-5	No	4	—	Yes	No	No
Germany, Federal Republic of	5	Yes	4½	½	Yes	Yes	Yes
Greece	5	No	3½	1½	Yes	No	Yes
Hungary	4	Yes	3¼	¾	Yes	No	Yes
Iceland	4½	No	2½	2	No	No	No

Ireland	7	No			Yes	Yes	Yes
Israel	5½	No	4½	1	Yes	Yes	Yes
Italy	4	No	3		Yes	No	Yes
Luxembourg			*See* pp. 66-67				
Malta[a]	4-5	No	4		Yes	Yes	Yes
Netherlands	5		5	—	—	—	—
Norway	5½	No	4	1½	—	—	—
Poland	6	No	3		Yes	Yes	Yes
Portugal	6	No	5	1	Yes	Yes	Yes
Romania	3	No	3	—	Yes	Yes	Yes
Spain	4	No	4	—			
Sweden	4½	No	3	1½			
Switzerland	5	No	4	1	—[b]	—[b]	—[b]
Turkey	4	No	3½	½	Yes	Yes	Yes
USSR	7	Yes	3		Yes	No	No
United Kingdom	6-7	No	5	1-2	Yes	Yes	Yes
Yugoslavia	4	Yes			Yes	No	Yes

Occupational health (industrial medicine)

Country	No. of years required for training in this specialty	Does this include internship?	From total given in first column		Type of examination		
			Minimum period of training required in the specialty itself (years)	Training required in other fields (years)	Oral	Written	Practical/ clinical
Albania	–						
Austria[e]	–						
Belgium	–						
Bulgaria	2	No	1		Yes	No	Yes
Czechoslovakia	3		3		Yes	No	Yes
Denmark	4½	No	3	1½	No	No	No
Finland	5	Yes	4	1	No	Yes	No
France	4	Yes	2	2	Yes	Yes	Yes
German Democratic Republic	4–5	No	3	1	Yes	No	No
Germany, Federal Republic of	4	Yes	2	2	Yes	Yes	Yes
Greece	4	No	4	–	Yes	No	Yes
Hungary	4	Yes	3¼	¾	Yes	No	Yes
Iceland	4½	No	2½	2	No	No	No

Ireland	6	No			Yes	Yes	Yes
Israel	—						
Italy	4	No	3		Yes	No	Yes
Luxembourg			*See* pp. 66-67				
Malta[b]							
Netherlands	2½		2½		—	—	—
Norway	5	No	3	2	—	—	—
Poland	5	No	2		Yes	Yes	Yes
Portugal	—						
Romania	3	No	3	—	Yes	Yes	Yes
Spain	3	No	3	—			
Sweden	4½	No	2	2½			
Switzerland	2				No	No	No
Turkey	1	No			Yes	Yes	Yes
USSR	7	Yes	2		Yes	No	No
United Kingdom	7	No	4	3	Yes	Yes	Yes
Yugoslavia	3	Yes			Yes	No	Yes

Oncology

Country	No. of years required for training in this specialty	Does this include internship?	From total given in first column		Type of examination		
			Minimum period of training required in the specialty itself (years)	Training required in other fields (years)	Oral	Written	Practical/ clinical
Albania	1				Yes	No	Yes
Austria	—						
Belgium	—						
Bulgaria	—						
Czechoslovakia	3		3		Yes	No	Yes
Denmark	—						
Finland[a]	5	Yes	4	1	No	Yes	No
France	2	No[b]	2	—	Yes	Yes	Yes
German Democratic Republic	—						
Germany, Federal Republic of	—						
Greece	—						
Hungary	2	Yes	2	—	Yes	No	Yes
Iceland	5	No	3	2	No	No	No

Ireland	—						
Israel[a]	4½	No	4	½	Yes	Yes	Yes
Italy	3	No			—	—	—
Luxembourg			*See* pp. 66-67				
Malta[c]	5		5	—	Yes	Yes	Yes
Netherlands	—						
Norway[a]	5	No	3	2	—	—	—
Poland[d]	4½	No	4½	—	No	Yes	No
Portugal	—						
Romania	3	No	2	1	Yes	Yes	Yes
Spain	4	No	2	2			
Sweden	4½	No	3	1½			
Switzerland	2						
Turkey	2	No			Yes	Yes	Yes
USSR	6	No	2		Yes	No	No
United Kingdom	7	No	4	3	Yes	Yes	Yes
Yugoslavia	1	Yes			Yes	No	Yes

Ophthalmology

Country	No. of years required for training in this specialty	Does this include internship?	From total given in first column		Type of examination		
			Minimum period of training required in the specialty itself (years)	Training required in other fields (years)	Oral	Written	Practical/ clinical
Albania	2				Yes	No	Yes
Austria	6		5	1	No	No	No
Belgium	4	No	4	—	No	No	No
Bulgaria	3	No	2	½	Yes	No	Yes
Czechoslovakia	4		4		Yes	No	Yes
Denmark	4½	No	4	½	No	No	No
Finland	5	Yes	4	1	No	Yes	No
France	4	Yes	2½	1½	Yes	Yes	Yes
German Democratic Republic	4–5	No	4	—	Yes	No	No
Germany, Federal Republic of	4	Yes	4	—	Yes	Yes	Yes
Greece	4	No	4	—	Yes	No	Yes
Hungary	4	Yes	3¼	¾	Yes	No	Yes
Iceland	4½	No	3	1½	No	No	No

Ireland	7	No			Yes	Yes	Yes
Israel	4½	No	4	½	Yes	Yes	Yes
Italy	4	No	3		Yes	No	Yes
Luxembourg			*See* pp. 66-67				
Malta[a]	4-5		4		Yes	Yes	Yes
Netherlands	4		4	—	—	—	—
Norway	5½	No	4	1½	—	—	—
Poland	5	No	2		Yes	No	Yes
Portugal	4	No	4	—	Yes	Yes	Yes
Romania	3	No	3	—	Yes	Yes	Yes
Spain	4	No	4	—			
Sweden	4	No	3½	½			
Switzerland	5	No	4	1	No	No	No
Turkey	3	No	2⅔	⅔	Yes	Yes	Yes
USSR	7	Yes	2		Yes	No	No
United Kingdom	6-7	No	4	2-3	Yes	Yes	Yes
Yugoslavia	3	Yes			Yes	No	Yes

Paediatrics

Country	No. of years required for training in this specialty	Does this include internship?	From total given in first column		Type of examination		
			Minimum period of training required in the specialty itself (years)	Training required in other fields (years)	Oral	Written	Practical/ clinical
Albania	2						
Austria	6		4	2	No	No	No
Belgium	5	No	3	—	No	No	No
Bulgaria	4	No	3	5/12	Yes	No	Yes
Czechoslovakia	3		3		Yes	No	Yes
Denmark	4½	No	4	½	No	No	No
Finland	5	Yes	4	1	No	Yes	No
France	4	Yes	2½	1½	Yes	Yes	Yes
German Democratic Republic	4-5	No	4	—	Yes	No	No
Germany, Federal Republic of	5	Yes	4½	½	Yes	Yes	Yes
Greece	4	No	4	—	Yes	No	Yes
Hungary	4	Yes	3½	½	Yes	No	Yes
Iceland	4½	No	3	1½	No	No	No

Ireland	7	No			Yes	Yes	Yes
Israel	4½	No	4	½	Yes	Yes	Yes
Italy	4	No	3		Yes	No	Yes
Luxembourg			*See* pp. 66-67				
Malta[a]	4-5		4		Yes	Yes	Yes
Netherlands	4				—	—	—
Norway	5	No	4	1	—	—	—
Poland	5½	No	3		Yes	Yes	Yes
Portugal	5	No	2⅝	2⅛	Yes	Yes	Yes
Romania	3	No	3	—	Yes	Yes	Yes
Spain	4	No	4	—			
Sweden	4	No	3	1			
Switzerland	5	No	4	1	No	No	No
Turkey	4	No	3¼	¾	Yes	Yes	Yes
USSR	7	Yes	3		Yes	No	No
United Kingdom	7	No	4	3	Yes	Yes	Yes
Yugoslavia	4	Yes			Yes	No	Yes

Parasitic diseases (tropical medicine)

Country	No. of years required for training in this specialty	Does this include internship?	From total given in first column		Type of examination		
			Minimum period of training required in the specialty itself (years)	Training required in other fields (years)	Oral	Written	Practical/ clinical
Albania	—						
Austria	—						
Belgium	—						
Bulgaria	3	No	2½	½	Yes	No	Yes
Czechoslovakia	3		3		Yes	No	Yes
Denmark	7½	No	1½	6	No	No	No
Finland	—						
France	2	No[a]	2	—	Yes	Yes	Yes
German Democratic Republic	2-3	No	2	—	No	No	No
Germany, Federal Republic of	2¼	Yes	2¼[b]	2¼[b]	Yes	Yes	Yes
Greece	—						
Hungary	2	Yes	2	—	Yes	No	Yes
Iceland	—						

Ireland	—						
Israel	—						
Italy	3	No	3	—	Yes	No	Yes
Luxembourg			*See* pp 66-67				
Malta	—						
Netherlands	—						
Norway	6	No	3	3	—	—	—
Poland	5	No	5	—	Yes	Yes	Yes
Portugal	—						
Romania	—						
Spain			*See* Microbiology				
Sweden	—						
Switzerland	5	No	3	2	No	No	No
Turkey	4	No	3¼	⅛	Yes	Yes	Yes
USSR	6	No	2		Yes	No	No
United Kingdom	7	No	4	3	Yes	Yes	Yes
Yugoslavia	1	Yes			Yes	No	Yes

Pathology

Country	No. of years required for training in this specialty	Does this include internship?	From total given in first column		Type of examination		
			Minimum period of training required in the specialty itself (years)	Training required in other fields (years)	Oral	Written	Practical/ clinical
Albania	2						
Austria	6		4	2	No	No	No
Belgium	—						
Bulgaria	3	No	2¾	¼	Yes	No	Yes
Czechoslovakia	—						
Denmark	—						
Finland	5	Yes	4	1	No	Yes	No
France	—						
German Democratic Republic	4–5	No	3	1	Yes	No	No
Germany, Federal Republic of	5	Yes	4	1	Yes	Yes	Yes
Greece	—						
Hungary	4	Yes	3½	½	Yes	No	Yes
Iceland	4½	No	3½	1	No	No	No

Ireland	6	No			Yes	Yes	Yes
Israel	4½	No	4	½	Yes	Yes	Yes
Italy	4	No	3		Yes	No	Yes
Luxembourg			*See* pp 66-67				
Malta[e]	4-5		4		Yes	Yes	Yes
Netherlands	4						
Norway	5	No	4	1	—	—	—
Poland	—						
Portugal	4	No	4	—	Yes	Yes	Yes
Romania	—						
Spain	—						
Sweden	4½	No	4	½			
Switzerland	5	No	4	1	No	No	No
Turkey	3	No			Yes	Yes	Yes
USSR	—						
United Kingdom	6-7	Yes	5	1-2	Yes	Yes	Yes
Yugoslavia	3	Yes			Yes	No	Yes

Clinical chemistry/biochemistry

Country	No. of years required for training in this specialty	Does this include internship?	From total given in first column		Type of examination		
			Minimum period of training required in the specialty itself (years)	Training required in other fields (years)	Oral	Written	Practical/ clinical
Albania	2						
Austria	6		4	2	No	No	No
Belgium	—						
Bulgaria	3	No	2		Yes	No	Yes
Czechoslovakia	3		3	1½[a]	Yes	No	Yes
Denmark[b]	5½	No	4½	1	No	No	No
Finland	5	Yes	4	1	No	Yes	No
France	2						
German Democratic Republic	4–5	No	4	—	Yes	No	No
Germany, Federal Republic of	—						
Greece	—						
Hungary	4	Yes	3½	½	Yes	No	Yes
Iceland[b]	4½	No	3½	1	No	No	No

Ireland	6	No			Yes	Yes	Yes
Israel	4	No	3	1	Yes	Yes	Yes
Italy	3	No	3	—	Yes	No	Yes
Luxembourg			*See* pp. 66-67				
Malta	4-5		2-3	2			
Netherlands	4				—	—	—
Norway	5	No	3	2	—	—	—
Poland	—						
Portugal	—						
Romania	—						
Spain	4	No	4	—			
Sweden	4½	No	4	½			
Switzerland	—						
Turkey	3	No	2¼	¼	Yes	Yes	Yes
USSR	—						
United Kingdom	6-7	Yes	5	1-2	Yes	Yes	Yes
Yugoslavia	3	Yes			Yes	No	Yes

Genetics (medical)

Country	No. of years required for training in this specialty	Does this include internship?	From total given in first column		Type of examination		
			Minimum period of training required in the specialty itself (years)	Training required in other fields (years)	Oral	Written	Practical/ clinical
Albania	—						
Austria	—						
Belgium	—						
Bulgaria	—						
Czechoslovakia	3		3		Yes	No	Yes
Denmark	—						
Finland	5	Yes	4	1	No	Yes	No
France	2	No[a]	2	—	Yes	Yes	Yes
German Democratic Republic	—						
Germany, Federal Republic of	2	Yes	2	—	Yes	Yes	Yes
Greece	—						
Hungary	—						
Iceland	—						

Ireland	–						
Israel	–						
Italy	3	No	3	–	Yes	No	Yes
Luxembourg			*See* pp. 66-67				
Malta	4-5		2-3	2			
Netherlands	–						
Norway	5	No	4	1	–	–	–
Poland	–						
Portugal	–						
Romania	–						
Spain	–						
Sweden	–						
Switzerland	–						
Turkey	2	No			Yes	Yes	Yes
USSR	6	No	2		Yes	No	No
United Kingdom	6-7	Yes	5	1-2	Yes	Yes	Yes
Yugoslavia	1	Yes			Yes	No	Yes

Haematology

Country	No. of years required for training in this specialty	Does this include internship?	From total given in first column		Type of examination		
			Minimum period of training required in the specialty itself (years)	Training required in other fields (years)	Oral	Written	Practical/ clinical
Albania	—						
Austria	—						
Belgium	—						
Bulgaria	2	No	1		Yes	No	Yes
Czechoslovakia	3		3		Yes	No	Yes
Denmark	6½	No	3	3½	No	No	No
Finland	2	Yes	2	—	No	Yes	No
France	2	No	2	—	Yes	Yes	Yes
German Democratic Republic	2-3	No	2	—	No	No	No
Germany, Federal Republic of	2	Yes	2	—	Yes	Yes	Yes
Greece	6	No	4	2	Yes	No	Yes
Hungary	2	Yes	2	—	Yes	No	Yes
Iceland	4½	No	3½	1	No	No	No

Ireland	6	No			Yes	Yes	Yes
Israel	4½	No	2	2½	Yes	Yes	Yes
Italy	3	No	3	—	Yes	No	Yes
Luxembourg			*See* pp. 66-67				
Malta	4-5		2-3	2			
Netherlands	—						
Norway	6	No	3	3	—	—	—
Poland	7	No	7	—	Yes	No	Yes
Portugal	5	No	3	2	Yes	Yes	Yes
Romania	3	No	2	1	Yes	Yes	Yes
Spain	4	No	3	1			
Sweden	—						
Switzerland	2	No	2	—	—[b]	—[b]	—[b]
Turkey	2	No			Yes	Yes	Yes
USSR	6	No	2		Yes	No	No
United Kingdom	6-7	No	5	1-2	Yes	Yes	Yes
Yugoslavia	1	Yes			Yes	No	Yes

Immunology

Country	No. of years required for training in this specialty	Does this include internship?	From total given in first column		Type of examination		
			Minimum period of training required in the specialty itself (years)	Training required in other fields (years)	Oral	Written	Practical/ clinical
Albania	—						
Austria[a]	6		4	2	No	No	No
Belgium	—						
Bulgaria	—						
Czechoslovakia	3		3		Yes	No	Yes
Denmark	4½	No	3½	1	No	No	No
Finland	2	Yes	2	—	No	Yes	No
France	2	No[b]	2	—	Yes	Yes	Yes
German Democratic Republic	—						
Germany, Federal Republic of	—						
Greece	—						
Hungary	—						
Iceland	4½	No	3½	1	No	No	No

Ireland	7	No			Yes	Yes	Yes
Israel	4½	No	2	2½	Yes	Yes	Yes
Italy	3	No	3	—	—	—	—
Luxembourg			*See* pp. 66-67				
Malta	4-5		2-3	2			
Netherlands	—						
Norway	5	No	4	1	—	—	—
Poland	—						
Portugal	—						
Romania	—						
Spain	4	No	4	—			
Sweden	4½	No	4	½			
Switzerland	2	No	2	—	No	No	No
Turkey	2	No			Yes	Yes	Yes
USSR	6	No	2		Yes	No	No
United Kingdom	6-7	No	5	1-2	Yes	Yes	Yes
Yugoslavia	1	Yes			Yes	No	Yes

Microbiology

Country	No. of years required for training in this specialty	Does this include internship?	From total given in first column		Type of examination		
			Minimum period of training required in the specialty itself (years)	Training required in other fields (years)	Oral	Written	Practical/ clinical
Albania	2						
Austria			*See* Immunology				
Belgium	—						
Bulgaria	3	No	2	½	Yes	No	Yes
Czechoslovakia	3		3		Yes	No	Yes
Denmark	5½	No	4½	1	No	No	No
Finland	5	Yes	4	1	No	Yes	No
France	—						
German Democratic Republic	4-5	No	3½	½	Yes	No	No
Germany, Federal Republic of	5	Yes	4	1	Yes	Yes	Yes
Greece	4	No	4	—	Yes	No	Yes
Hungary	2	Yes	2	—	Yes	No	Yes
Iceland[a]	4½	No	3½	1	No	No	No

Ireland	6	No			Yes	Yes	Yes
Israel	4	No	3	1	Yes	Yes	Yes
Italy	4	No	3		Yes	No	Yes
Luxembourg			*See* pp. 66-67				
Malta	4-5		2-3	2			
Netherlands	4		3	1	—	—	—
Norway	5	No	4	1	—	—	—
Poland	5	No	2		Yes	No	Yes
Portugal	—						
Romania	3	No	3	—	Yes	Yes	Yes
Spain[b]	3	No	3	—			
Sweden	4½	No	4	½			
Switzerland	—						
Turkey	3	No	2¼	¼	Yes	Yes	Yes
USSR	—						
United Kingdom	6-7	Yes	5	1-2	Yes	Yes	Yes
Yugoslavia	3	Yes			Yes	No	Yes

Morbid anatomy (histopathology)

Country	No. of years required for training in this specialty	Does this include internship?	From total given in first column		Type of examination		
			Minimum period of training required in the specialty itself (years)	Training required in other fields (years)	Oral	Written	Practical/ clinical
Albania	—						
Austria	6		4	2	No	No	No
Belgium	5	No	5	—	No	No	No
Bulgaria	3	No	2⅔	⅓	Yes	No	Yes
Czechoslovakia	3		3		Yes	No	Yes
Denmark	5½	No	4½	1	No	No	No
Finland	—						
France	4	Yes	2½	1½	Yes	Yes	Yes
German Democratic Republic	4-5	No	4	—	Yes	No	No
Germany, Federal Republic of	—						
Greece	4	No	4	—	Yes	No	Yes
Hungary			*See* Pathology				
Iceland	4½	No	3½	1	No	No	No

Ireland	6	No			Yes	Yes	Yes
Israel	4½	No	4	½	Yes	Yes	Yes
Italy	3	No	3	—	Yes	No	Yes
Luxembourg			*See* pp. 66-67				
Malta	—						
Netherlands	5				—	—	—
Norway	—						
Poland	3¾	No	1¾		Yes	Yes	Yes
Portugal	5	No	5	—	Yes	Yes	Yes
Romania			*See* Forensic/legal medicine				
Spain	4	No	4	—			
Sweden	—						
Switzerland[a]	5	No	4	1	No	No	No
Turkey			*See* Pathology				
USSR	7	Yes	3		Yes	No	No
United Kingdom	6-7	Yes	5	1-2	Yes	Yes	Yes
Yugoslavia	3	Yes			Yes	No	Yes

Psychiatry

Country	No. of years required for training in this specialty	Does this include internship?	From total given in first column		Type of examination		
			Minimum period of training required in the specialty itself (years)	Training required in other fields (years)	Oral	Written	Practical/ clinical
Albania	1	No			Yes	No	Yes
Austria	6		4	2	No	No	No
Belgium	5	No	4	1	No	No	No
Bulgaria	3	No	2	5/12	Yes	No	Yes
Czechoslovakia	3		3		Yes	No	Yes
Denmark	5½	No	4½	1	No	No	No
Finland	5	Yes	4	1	No	Yes	No
France	4	Yes	3	1	Yes	Yes	Yes
German Democratic Republic	—						
Germany, Federal Republic of	4	Yes	3	1	Yes	Yes	Yes
Greece	4	No	3	1	Yes	No	Yes
Hungary	4	Yes	3½	½	Yes	No	Yes
Iceland	4½	No	3	1½	No	No	No

Ireland	7	No			Yes	Yes	Yes
Israel	4	No	3½	½	Yes	Yes	Yes
Italy	4	No	3		Yes	No	Yes
Luxembourg			*See* pp 66-67				
Malta[e]	4-5		4		Yes	Yes	Yes
Netherlands	4½		3½	1	—	—	—
Norway	5	No	4	1	—	—	—
Poland	5	No	2		Yes	Yes	Yes
Portugal	4	No	3½	½	Yes	Yes	Yes
Romania	3	No	3	—	Yes	Yes	Yes
Spain	4	No	4	—			
Sweden	4½	No	3½	1			
Switzerland	5	No	4	1	No	No	No
Turkey	4	No	2½	1½	Yes	Yes	Yes
USSR	7	Yes	3		Yes	No	No
United Kingdom	6-7	No	6	1-2	Yes	Yes	Yes
Yugoslavia	3	Yes			Yes	No	Yes

Public health (hygiene)

Country	No. of years required for training in this specialty	Does this include internship?	From total given in first column		Type of examination		
			Minimum period of training required in the specialty itself (years)	Training required in other fields (years)	Oral	Written	Practical/ clinical
Albania	1						
Austria	6		4	2	No	No	No
Belgium	—						
Bulgaria	3	No	2		Yes	No	Yes
Czechoslovakia	3		3	—	Yes	No	Yes
Denmark			*See* Epidemiology/community medicine				
Finland	5	Yes	4	1	No	Yes	No
France	4	Yes	2	2	Yes	Yes	Yes
German Democratic Republic	4–5	No	3	1	Yes	No	No
Germany, Federal Republic of	5	Yes	—	—	Yes	Yes	Yes
Greece	1	No	1	—	Yes	Yes	Yes
Hungary	4	Yes	3½	½	Yes	No	Yes
Iceland[a]	—						

Ireland	*See* Epidemiology/community medicine						
Israel	4	No	–	–	Yes	Yes	Yes
Italy	4	No	3		Yes	No	Yes
Luxembourg	*See* pp 66-67						
Malta[b]							
Netherlands	–						
Norway	*See* Epidemiology/community medicine						
Poland	5	No	2		Yes	No	Yes
Portugal	3	No	2	1	Yes	Yes	Yes
Romania	3	No	3	–	Yes	Yes	Yes
Spain	3	No	3	–			
Sweden	–						
Switzerland	*See* Epidemiology/community medicine						
Turkey	3	No	2	1	Yes	Yes	Yes
USSR	6	No	2		Yes	No	No
United Kingdom	*See* Epidemiology/community medicine						
Yugoslavia	3	Yes			Yes	No	Yes

Radiodiagnosis

Country	No. of years required for training in this specialty	Does this include internship?	From total given in first column		Type of examination		
			Minimum period of training required in the specialty itself (years)	Training required in other fields (years)	Oral	Written	Practical/ clinical
Albania	2				Yes	No	Yes
Austria	6		5[a]	1	No	No	No
Belgium	4	No	4	—	No	No	No
Bulgaria	3	No	2		Yes	No	Yes
Czechoslovakia	4		4		Yes	No	Yes
Denmark	5	No	4½	½	No	No	No
Finland	5	Yes	4	1	No	Yes	No
France	4	Yes	2	2	Yes	Yes	Yes
German Democratic Republic	4-5	No	4	—	Yes	No	No
Germany, Federal Republic of	5	Yes	4½	½	Yes	Yes	Yes
Greece	4	No	4	—	Yes	No	Yes
Hungary	4	Yes	3¼	¾	Yes	No	Yes
Iceland	4½	No	3	1½	No	No	No

Ireland	6	No			Yes	Yes	Yes
Israel	4	No	3½	½	Yes	Yes	Yes
Italy	4	No	3		Yes	No	Yes
Luxembourg			*See* pp. 66-67				
Malta[b]	4-5		4		Yes	Yes	Yes
Netherlands	4		4	—	—	—	—
Norway	5	No	4	1	—	—	—
Poland	6	No	3		Yes	No	Yes
Portugal	4	No	4	—	Yes	Yes	Yes
Romania	3	No	3	—	Yes	Yes	Yes
Spain	4	No	3	1			
Sweden	4½	No	4	½			
Switzerland	5	No	4	1	Yes	Yes	Yes
Turkey	3	No	2¼	¾	Yes	Yes	Yes
USSR	6	No	2		Yes	No	No
United Kingdom	6-7	No	5	1-2	Yes	Yes	Yes
Yugoslavia	3	Yes			Yes	No	Yes

Radiotherapy

Country	No. of years required for training in this specialty	Does this include internship?	From total given in first column		Type of examination		
			Minimum period of training required in the specialty itself (years)	Training required in other fields (years)	Oral	Written	Practical/ clinical
Albania	—						
Austria			*See* Radiodiagnosis				
Belgium	4	No	3¼	—	No	No	No
Bulgaria	3	No	2	¼	Yes	No	Yes
Czechoslovakia	3		3		Yes	No	Yes
Denmark	5½	No	4	1½	No	No	No
Finland			*See* Oncology				
France	4	Yes	2	2	Yes	Yes	Yes
German Democratic Republic	—						
Germany, Federal Republic of	2½	Yes	2½	—	Yes	Yes	Yes
Greece	4	No	4	—	Yes	No	Yes
Hungary	2	Yes	2	—	Yes	No	Yes
Iceland	4½	No	3	1½	No	No	No

Ireland	6	No			Yes	Yes	Yes
Israel			*See* Oncology				
Italy	4	No	3		Yes	No	Yes
Luxembourg			*See* pp. 66-67				
Malta[a]	4-5		4		Yes	Yes	Yes
Netherlands	4		4	—	—	—	—
Norway			*See* Oncology				
Poland	6	No	3		Yes	No	Yes
Portugal	4	No	4	—	Yes	Yes	Yes
Romania	3	No	3	—	Yes	Yes	Yes
Spain	4	No	3	1			
Sweden	—						
Switzerland	5	No	4	1	Yes	Yes	Yes
Turkey	3	No	2	1	Yes	Yes	Yes
USSR	6	No	2		Yes	No	No
United Kingdom	6-7	No	5	1-2	Yes	Yes	Yes
Yugoslavia	3	Yes			Yes	No	Yes

Surgery — general

Country	No. of years required for training in this specialty	Does this include internship?	From total given in first column		Type of examination		
			Minimum period of training required in the specialty itself (years)	Training required in other fields (years)	Oral	Written	Practical/ clinical
Albania	3				Yes	No	Yes
Austria	6		4	2	No	No	No
Belgium	6	No	4	2	No	No	No
Bulgaria	4	No	3	⅓	Yes	No	Yes
Czechoslovakia	5		5		Yes	No	Yes
Denmark	5½	No	5½	—	No	No	No
Finland	5	Yes	4	1	No	Yes	No
France	—						
German Democratic Republic	4-5	No	4	—	Yes	No	No
Germany, Federal Republic of	6		5½	½	Yes	Yes	Yes
Greece	5	No	3½	1½	Yes	No	Yes
Hungary	4	Yes	3	1	Yes	No	Yes
Iceland	4½	No	3½	1	No	No	No

Ireland	7	No			Yes	Yes	Yes
Israel	6	Yes	4½	1½	Yes	Yes	Yes
Italy	5	No	3		No	No	Yes
Luxembourg			*See* pp. 66-67				
Malta[9]	4-5		4		Yes	Yes	Yes
Netherlands	6				—	—	—
Norway	6	No	5	1	—	—	—
Poland	6	No	2		Yes	Yes	Yes
Portugal	6	No	4½	1½	Yes	Yes	Yes
Romania	3	No	3	—	Yes	Yes	Yes
Spain	5	No	4	1			
Sweden	4½	No	4	½			
Switzerland	6	No	6	—	No	No	No
Turkey	4	No	3¼	¾	Yes	Yes	Yes
USSR	7	Yes	3		Yes	No	No
United Kingdom	6-7	No	4	2-3	Yes	Yes	Yes
Yugoslavia	4	Yes			Yes	No	Yes

Neurosurgery

Country	No. of years required for training in this specialty	Does this include internship?	From total given in first column		Type of examination		
			Minimum period of training required in the specialty itself (years)	Training required in other fields (years)	Oral	Written	Practical/ clinical
Albania	—						
Austria	6		4½	1½	No	No	No
Belgium	6	No	3	2	No	No	No
Bulgaria	4	No	3¾	¼	Yes	No	Yes
Czechoslovakia	5		5		Yes	No	Yes
Denmark	7	No	3½	3½	No	No	No
Finland	5	Yes	5		No	Yes	No
France	5	Yes	2	3	Yes	Yes	Yes
German Democratic Republic	4-5	No	4	—	Yes	No	No
Germany, Federal Republic of	6		5	1	Yes	Yes	Yes
Greece	6	No	3	3	Yes	No	Yes
Hungary	3	Yes	2	1	Yes	No	Yes
Iceland	6½	No	2	4½	No	No	No

Ireland	8	No			Yes	Yes	Yes
Israel	5½	No	3½	2	Yes	Yes	Yes
Italy	5	No	3		Yes	No	Yes
Luxembourg			*See* pp. 66-67				
Malta	4-5		2-3	2			
Netherlands	6		4	2	—	—	—
Norway	6	No	5	1	—	—	—
Poland	5½	No	2	—	Yes	No	Yes
Portugal	6	No	4	2	Yes	Yes	Yes
Romania	5	No	4	1	Yes	Yes	Yes
Spain	5	No	3	2			
Sweden	5½	No	4	1½			
Switzerland	6	No	4	2	Yes	Yes	Yes
Turkey	5	No	3½	1½	Yes	Yes	Yes
USSR	7	Yes	3		Yes	No	No
United Kingdom	8	No	5	3	Yes	Yes	Yes
Yugoslavia	5	Yes			Yes	No	Yes

Orthopaedics

Country	No. of years required for training in this specialty	Does this include internship?	From total given in first column		Type of examination		
			Minimum period of training required in the specialty itself (years)	Training required in other fields (years)	Oral	Written	Practical/ clinical
Albania	3						
Austria	6		3½	2½	No	No	No
Belgium	6	No	3½	2	No	No	No
Bulgaria[a]	4	No	3¼	¾	Yes	No	Yes
Czechoslovakia	5		5	½[b]	Yes	No	Yes
Denmark	5½	No	3½	2	No	No	No
Finland[a]	2	Yes	2	—	No	Yes	No
France[a]	5	Yes	2½	1½	Yes	Yes	Yes
German Democratic Republic	4-5	No	3½	½	Yes	No	No
Germany, Federal Republic of	5	Yes	4	1	Yes	Yes	Yes
Greece	5	No	3	2	Yes	No	Yes
Hungary	4	Yes	3½	½	Yes	No	Yes
Iceland	5½	No	3½	2	No	No	No

Ireland	7	No			Yes	Yes	Yes
Israel	5½	No	3½	2	Yes	Yes	Yes
Italy	4	No	3		Yes	No	Yes
Luxembourg			*See* pp. 66-67				
Malta	4-5		2-3	2			
Netherlands	6		4	2	—	—	—
Norway	8	No	3	5	—	—	—
Poland[e]	6	No	2	—	Yes	No	Yes
Portugal	6	No	4½	1½	Yes	Yes	Yes
Romania[e]	3	No	3	—	Yes	Yes	Yes
Spain[e]	5	No	3	2			
Sweden	4½	No	2	2½			
Switzerland	6	No	3	3	No	No	No
Turkey	4	No	2¾	1¼	Yes	Yes	Yes
USSR	6	Yes	2		Yes	No	No
United Kingdom	6-7	No	4	2-3	Yes	Yes	Yes
Yugoslavia	4	Yes			Yes	No	Yes

Otorhinolaryngology

Country	No. of years required for training in this specialty	Does this include internship?	From total given in first column		Type of examination		
			Minimum period of training required in the specialty itself (years)	Training required in other fields (years)	Oral	Written	Practical/ clinical
Albania	2		2				
Austria	6		4	2	No	No	No
Belgium	4	No	3½	—	No	No	No
Bulgaria	3	No	2	⅛	Yes	No	Yes
Czechoslovakia	4		4		Yes	No	Yes
Denmark	5	No	4	1	No	No	No
Finland	5	Yes	4	1	No	Yes	No
France	4	Yes	2	2	Yes	Yes	Yes
German Democratic Republic	4-5	No	3¾	¼	Yes	No	No
Germany, Federal Republic of	4	Yes			Yes	Yes	Yes
Greece	5	No	3	2	Yes	No	Yes
Hungary	4	Yes	3½	½	Yes	No	Yes
Iceland	4½	No	3	1½	No	No	No

Ireland	6	No			Yes	Yes	Yes
Israel	4½	No	3½	1	Yes	Yes	Yes
Italy	3	No	3	—	Yes	No	Yes
Luxembourg			*See* pp. 66-67				
Malta[e]	4-5		2-3	2			
Netherlands	4		4	—	No	No	No
Norway	5	No	4	1	—	—	—
Poland	5	No	2		Yes	No	Yes
Portugal	4	No	4	—	Yes	Yes	Yes
Romania	3	No	3	—	Yes	Yes	Yes
Spain	4	No	3	1			
Sweden	4½	No	3½	1			
Switzerland	5	No	4	1	No	No	No
Turkey	3	No	2⅛	⅞	Yes	Yes	Yes
USSR	6	No	2		Yes	No	No
United Kingdom	6	No	3	2-3	Yes	Yes	Yes
Yugoslavia	3	Yes			Yes	No	Yes

Thoracic/cardiac/cardiothoracic surgery

Country	No. of years required for training in this specialty	Does this include internship?	From total given in first column		Type of examination		
			Minimum period of training required in the specialty itself (years)	Training required in other fields (years)	Oral	Written	Practical/ clinical
Albania	—						
Austria	—						
Belgium	—						
Bulgaria	—						
Czechoslovakia	5		5		Yes	No	Yes
Denmark	7	No	2½	4½	No	No	No
Finland	2	Yes	2	—	No	Yes	No
France	5	Yes	3	2	Yes	Yes	Yes
German Democratic Republic	—						
Germany, Federal Republic of	2	Yes	2	—	Yes	Yes	Yes
Greece	7	No	3	4	Yes	No	Yes
Hungary	2	Yes	2	—	Yes	No	Yes
Iceland	6½	No	2	4½	No	No	No

Ireland	7	No			Yes	Yes	Yes
Israel	5½	No	3	2½	Yes	Yes	Yes
Italy	5	No	3		Yes	No	Yes
Luxembourg			*See* pp. 66-67				
Malta	4-5		2-3	2			
Netherlands	6		3		—	—	—
Norway	8	No	3	5	—	—	—
Poland	6-7	No	6		Yes	Yes	Yes
Portugal	6	No	3½	2½	Yes	Yes	Yes
Romania	3-4	No	3	1	Yes	Yes	Yes
Spain	5	No	3	2			
Sweden	5½	No	3	2½			
Switzerland	—						
Turkey	5	No	3½	1½	Yes	Yes	Yes
USSR	7	Yes	3		Yes	No	No
United Kingdom	7	No	4	3	Yes	Yes	Yes
Yugoslavia	2	Yes			Yes	No	Yes

Traumatology/accident surgery

Country	No. of years required for training in this specialty	Does this include internship?	From total given in first column		Type of examination		
			Minimum period of training required in the specialty itself (years)	Training required in other fields (years)	Oral	Written	Practical/ clinical
Albania	3						
Austria	6		3	3	No	No	No
Belgium	—						
Bulgaria			*See* Orthopaedics				
Czechoslovakia	5		5		Yes	No	Yes
Denmark	—						
Finland			*See* Orthopaedics				
France			*See* Orthopaedics				
German Democratic Republic	2-3	No	2¾	¼	No	No	No
Germany, Federal Republic of	2	Yes	2	—	Yes	Yes	Yes
Greece	—						
Hungary	2	Yes	2	—	Yes	No	Yes
Iceland	—						

Ireland	7	No			Yes	Yes	Yes
Israel	—						
Italy	5	No			Yes	No	Yes
Luxembourg			*See* pp. 66-67				
Malta	4-5		2-3	2			
Netherlands	—						
Norway	—						
Poland			*See* Orthopaedics				
Portugal	—						
Romania			*See* Orthopaedics				
Spain			*See* Orthopaedics				
Sweden	—						
Switzerland	—						
Turkey	—						
USSR	7	Yes	3		Yes	No	No
United Kingdom	7	No	4	3	Yes	Yes	Yes
Yugoslavia	4						

Urology

Country	No. of years required for training in this specialty	Does this include internship?	From total given in first column		Type of examination		
			Minimum period of training required in the specialty itself (years)	Training required in other fields (years)	Oral	Written	Practical/ clinical
Albania	—						
Austria	6		4	2	No	No	No
Belgium	6	No	3	2	No	No	No
Bulgaria	4	No	2¾	1¼	Yes	No	Yes
Czechoslovakia	4		4		Yes	No	Yes
Denmark	7	No	3	4	No	No	No
Finland	2	Yes	2	—	No	Yes	No
France	5	Yes	2	3	Yes	Yes	Yes
German Democratic Republic	4-5	No	3	1	Yes	No	No
Germany, Federal Republic of	5	Yes	4	1	Yes	Yes	Yes
Greece	5	No	3	2	Yes	No	Yes
Hungary	4	Yes	3½	½	Yes	No	Yes
Iceland	6½	No	2	4½	No	No	No

Ireland	6	No			Yes	Yes	Yes
Israel	5½	No	3	2½	Yes	Yes	Yes
Italy	3-5	No	3		Yes	No	Yes
Luxembourg			*See* pp. 66-67				
Malta	4-5		2-3	2			
Netherlands	6		4	2	—	—	—
Norway	8	No	3	5	—	—	—
Poland	5	No	5	—	Yes	No	Yes
Portugal	6	No	4½	1½	Yes	Yes	Yes
Romania	3	No	3	—	Yes	Yes	Yes
Spain	5	No	4	1			
Sweden	4½	No	2	2½			
Switzerland	6	No	3	3	No	No	No
Turkey	4	No	3½	½	Yes	Yes	Yes
USSR	6	No	3		Yes	No	No
United Kingdom	6	No	3	3	Yes	Yes	Yes
Yugoslavia	4	Yes			Yes	No	Yes

Footnotes to Table 3

Anaesthetics with reanimation and/or intensive care

[a] Anaesthetics and intensive care are two separate specialties.

Clinical physiology

[a] And nuclear medicine

Epidemiology/community medicine

[a] Epidemiology only.

[b] Community medicine only.

[c] Hygiene and epidemiology.

[d] To become a specialist in public health, a full period of training in some other specialty is required. In addition, a minimum of 1 year in public health, social medicine, and/or preventive medicine at an approved institution or university provided that the studies lead to a final examination or certificate.

[e] Training arranged principally in other countries.

[f] Communicable diseases and epidemiology.

[g] Prevention and public health.

Forensic/legal medicine

[a] Morbid anatomy and forensic medicine.

General practice/family practice/general medicine

[a] Family and community medicine.

[b] Internal medicine, 2 years; surgery, 1 year; optional disciplines, 2 years.

Geriatrics/gerontology

[a] Long-term medicine and geriatrics.

[b] Included with somatic long-term care.

Cardiology

[a] Training arranged principally in other countries.

[b] Examination(s) proposed.

Chest medicine/tuberculosis

[a] Training arranged principally in other countries.

Neurology/neuropsychiatry

[a] Neurology only.

[b] Neurology and neuropsychiatry are separate specialties. In Bulgaria the length of training is the same for both. Where two figures appear under the Federal Republic of Germany, the first refers to neurology and the second to neuropsychiatry.

[c] For neuropsychiatry, 5 months; for neurology, 3 months.

[d] Training arranged principally in other countries.

Obstetrics and gynaecology

[a] In conjunction with the Free University of Brussels and the Catholic University of Leuven, Belgium.

[b] Examination(s) proposed.

Occupational health (industrial medicine)

[a] Those physicians who wish to work in occupational health attend a 12-week course.

[b] Training arranged principally in other countries.

Oncology

[a] Oncology/radiotherapy.

[b] Not completely.

[c] In conjunction with the Free University of Brussels and the Catholic University of Leuven, Belgium.

[d] Surgical oncology.

Ophthalmology

[a] In conjunction with the Free University of Brussels and the Catholic University of Leuven, Belgium.

Paediatrics

[a] In conjunction with the Free University of Brussels and the Catholic University of Leuven, Belgium.

Parasitic diseases (tropical medicine)

[a] Not completely.

[b] Training in specialty and other fields combined together.

Pathology

[a] In conjunction with the Free University of Brussels and the Catholic University of Leuven, Belgium.

Clinical chemistry/biochemistry

[a] Internal medicine, 9 months; anaesthesia, 9 months.

[b] Chemical pathology.

Genetics (medical)

[a] Not completely.

Haematology

[a] Not completely.

[b] Examination(s) proposed.

Immunology

[a] Microbiological and immunological laboratory diagnosis.

[b] Not completely.

Microbiology

[a] This includes bacteriology and virology.

[b] Microbiology and parasitology.

Morbid anatomy (histopathology)

[a] Clinical cytopathology.

Psychiatry

[a] In conjunction with the Free University of Brussels and the Catholic University of Leuven, Belgium.

Public health (hygiene)

[a] To become a specialist in public health, a full period of training in some other specialty is required. In addition, a minimum of 1 year in public health, social medicine, and/or preventive medicine at an approved institution or university provided that the studies lead to a final examination or certificate.

[b] Training arranged principally in other countries.

Radiodiagnosis

[a] Including 6 months in radiotherapy.

[b] In conjunction with the Free University of Brussels and the Catholic University of Leuven, Belgium.

Radiotherapy

[a] In conjunction with the Free University of Brussels and the Catholic University of Leuven, Belgium.

Surgery — general

[a] In conjunction with the Free University of Brussels and the Catholic University of Leuven, Belgium.

Orthopaedics

[a] Orthopaedics and traumatology.

[b] In general surgery.

Otorhinolaryngology

[a] In conjunction with the Free University of Brussels and the Catholic University of Leuven, Belgium.

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